



FRIDAY, MARCH 2.

Train Accidents in January.

The following accidents are included in our record for the month of January.

REAR COLLISIONS.

On the morning of the 1st a passenger train on the Southern Pacific road ran into the rear of a freight near Sumner, Cal., doing a little damage. A sand storm was raging at the time.

On the night of the 2d a freight train on the New York, Lake Erie & Western road ran over a misplaced switch and into another freight on a siding at West End, N. J., wrecking several cars.

On the night of the 3d, a construction train on the Southern Pacific road ran into the rear of another construction train at Sumner, Cal., wrecking several cars, killing one Chinaman and injured five others.

Near midnight on the 3d a New York Central shifting engine ran into a Delaware & Hudson freight in Schenectady, N. Y., doing some damage.

On the morning of the 5th a local passenger train on the Fitchburg road ran into the rear of a freight near Waltham, Mass., damaging the caboose.

On the afternoon of the 6th a pushing engine on the New York Central & Hudson River road ran into the rear of a freight train near Byron, N. Y., damaging the caboose and injuring a brakeman.

On the evening of the 6th a passenger train on the Pennsylvania Railroad ran into the rear of a freight at Youngwood, Pa., damaging several cars.

On the afternoon of the 8th a passenger train on the New York Central & Hudson River road ran into the rear of a freight train near Niagara Falls, N. Y., damaging two cars and killing a brakeman.

On the night of the 8th a freight train on the Pennsylvania Railroad ran into a preceding freight, which had some of its cars wrecked a few minutes before, near Clark's Ferry, Pa. The engine and 20 cars were piled up in a very bad wreck; a trainman was killed and two hurt.

Early on the morning of the 9th a freight train on the New York, Lake Erie & Western road ran into a preceding freight near Kirkwood, N. Y., wrecking an engine and 14 cars.

Early on the morning of the 9th a passenger train on the Chicago & Northwestern road ran into the rear of a freight at Waukegan, Ill., damaging the engine and several cars. The wrech caught fire and two cars were burned up.

On the night of the 9th a freight train on the New York Central & Hudson River road ran into another freight which was crossing over the main track at Crittenden, N. Y., wrecking several cars.

Very early on the morning of the 11th a freight train on the New York, Lake Erie & Western road ran into a preceding freight in Jersey City, N. J., damaging several cars.

On the morning of the 11th a car broke loose from a freight train on the Louisville & Nashville road in Evansville, Ind., and ran down the incline and into some cars on the transfer boat, doing much damage.

On the morning of the 11th a passenger train on the Illinois Central road ran over a misplaced switch and into a freight train on a siding at Rantoul, Ill. The engines and several cars were damaged and a fireman hurt.

On the evening of the 11th, a freight train on the New York Central & Hudson River road ran into a preceding freight at Canandaigua, N. Y., damaging six cars.

On the evening of the 13th a freight train on the New York Central & Hudson River road, ran into a preceding freight near Johnstown, N. Y., damaging several cars.

On the night of the 14th a passenger train on the Louisville & Nashville road, ran into some freight cars standing on the track in Edgefield, Tenn., wrecking two cars.

On the night of the 14th a freight train on the Wabash, St. Louis & Pacific road, ran into the rear of a preceding freight near Stokes, Ill., damaging several cars. The caboose caught fire and was destroyed.

On the night of the 14th a passenger train on the Syracuse, Geneva & Corning road ran into a coal train standing at Ferenthaug, N. Y., damaging the engine and several cars. Two trainmen and a passenger were hurt.

On the morning of the 15th a freight train on the Kendall & Eldred road ran into a preceding freight near Eldred, Pa., damaging the engine and several cars.

On the morning of the 17th a freight train on the Georgia Railroad ran into a preceding freight at Stone Mountain, Ga., damaging an engine and several cars.

On the evening of the 17th a yard engine on the New York, Lake Shore & Western road ran into a freight train in Port Jervis, N. Y., wrecking several cars.

On the evening of the 18th two engines and a snow-plow on the Atlantic & Pacific road ran into a derailed engine near Fort Wingate, Ar., in a blinding snow storm, and were badly wrecked.

On the afternoon of the 19th a wrecking train sent to the relief ran into the former wreck, covering the road with a very complicated wreck. The snow-storm was still raging.

Very early on the morning of the 19th a passenger train on the New York Central & Hudson River road ran into the rear of a freight in Dewitt, N. Y., wrecking the caboose and injuring two brakemen.

On the afternoon of the 20th a freight train on the Albany & Susquehanna road ran into the rear of a coal train near Waterville, N. Y., wrecking several cars.

Very early on the morning of the 21st a freight train on the Pennsylvania Railroad ran into a preceding freight near Pennypack, Pa., and the engine and 18 cars were piled up in a bad wreck. The accident was caused by a careless operator, who gave the second freight the signal to go ahead, when he should have stopped it.

On the morning of the 22d a passenger train on the Louisville & Nashville road ran into the rear of a freight in Decatur, Ala., damaging several cars.

On the evening of the 22d a freight train on the Missouri Pacific road ran into the rear of a preceding freight near Independence, Mo., damaging several cars.

On the evening of the 23d a freight train on the South-eastern road ran into the rear of a passenger train which had stopped at Cowansville, P. Q., damaging the rear car.

On the morning of the 26th a freight train on the Grand Trunk road ran into a preceding freight near Prescott, Ont., wrecking several cars. There was a dense fog at the time.

On the 30th a freight train on the Chicago, Milwaukee & St. Paul road ran over a misplaced switch and into another freight standing on a siding in Watertown, Wis., damaging both engines and several cars.

On the afternoon of the 31st a freight train on the New York Central & Hudson River road ran into the rear of another freight which was switching at Amsterdam, N. Y.,

and 14 cars were piled up in a bad wreck, scattered over three of the four tracks.

Late on the night of the 31st a passenger train on the Lake Shore & Michigan Southern ran into the rear of a freight train near White Pigeon, Ind., wrecking the caboose.

BUTTING COLLISIONS.

On the morning of the 1st there was a butting collision between a passenger and a freight train on the Savannah, Florida & Western road at Altamaha Bridge, Ga. Both engines and several cars were damaged and one car destroyed by fire. A brakeman was hurt. There was a dense fog at the time.

On the afternoon of the 1st there was a butting collision between two switching freight trains in the Northern Pacific yard at New Tacoma, Wash. Ter. An engine and two cars were wrecked and a brakeman hurt.

On the morning of the 3rd there was a butting collision between a passenger and a freight train on the Pittsburgh, Cincinnati & St. Louis road at Cambridge City, Ind., wrecking both engines and several cars.

Very early on the morning of the 5th some cars broke loose from a freight train on the Union Pacific road at Evanston, Wyo., and ran back down grade and into the head of a following freight. The engine and six cars were badly wrecked, the fireman and a brakeman killed and the engineer hurt.

Very early on the morning of the 8th there was a butting collision between two passenger trains on the Burlington, Cedar Rapids & Northern road near Norris, Ia. Both engines and one car were wrecked, a passenger killed and three hurt.

On the morning of the 10th a passenger train on the Pennsylvania Railroad met a yard engine in Jersey City, N. J., and both engines were damaged.

On the afternoon of the 14th in the St. Louis Bridge tunnel in St. Louis, there was a butting collision between a freight train and a wild engine, by which both engines were slightly damaged.

On the evening of the 18th a Western & Atlantic freight train backed out of a siding and into a Central, of Georgia, passenger train which had just started out of the station in Atlanta, Ga. Two freight cars and a sleeping car were badly damaged, the sleeping car reaching the switch just as the first freight car struck it.

On the morning of the 21st a passenger train on the Pittsburgh, Fort Wayne & Chicago road ran over a misplaced switch in Allegheny, Pa., and into a passenger train coming on the opposite track. Two cars were slightly damaged.

On the afternoon of the 24th there was a butting collision between a freight train and a wild engine on the Pennsylvania Railroad near Kittanning Point, Pa. Both engines were slightly damaged and an engineer hurt.

On the night of the 26th there was a butting collision between two freight trains on the Baltimore & Ohio road near Cambridge, O. Both engines were damaged.

On the morning of the 26th there was a butting collision between two freight trains on the Wabash, St. Louis & Pacific road near Hamilton, Ill. Both engines were wrecked.

On the afternoon of the 26th there was a butting collision between a passenger and a freight train on the Connonton Valley road in Canton, O., caused by the mistake of a train dispatcher. Both engines and several cars were wrecked, an engineer badly and a fireman fatally hurt, and 15 passengers slightly injured.

Early on the morning of the 28th there was a butting collision between two freight trains on the Pittsburgh, Fort Wayne & Chicago road, near Wooster, O. Both engines and several cars were wrecked and a brakeman killed. The engineer of one of the trains had orders to meet several extras, and believed that they had all passed.

On the afternoon of the 30th there was a butting collision between two coal trains on the Philadelphia & Reading road near Shenandoah, Pa. Both engines and 40 cars were piled up in a bad wreck.

CROSSING COLLISIONS.

On the morning of the 13th a Belt road freight train ran into an Indianapolis & Vincennes passenger train at the crossing in Indianapolis, Ind. A car was badly broken and four passengers hurt. The signals were not properly set.

On the morning of the 16th a Lake Shore & Michigan Southern passenger train ran into a Chicago, Rock Island & Pacific switching train in Englewood, Ill. The yard engine was wrecked and seven trainmen hurt.

On the morning of the 18th a Chicago, Milwaukee & St. Paul passenger train ran into a Chicago & Northwestern passenger train at the crossing in Freeport, Ill., damaging a car and injuring a brakeman.

On the afternoon of the 22d a special passenger train on the Chicago & Atlantic road ran into a Louisville, New Albany & Chicago freight at the crossing near Hammond, Ill., damaging several cars.

DERAILMENTS, BROKEN RAIL.

On the morning of the 9th a passenger train on the Chicago, Rock Island & Pacific road was thrown from the track near Stuart, Ia., by a broken rail. Two trainmen and a passenger were hurt.

Early on the morning of the 11th a passenger train on the Wabash, St. Louis & Pacific road was thrown from the track near White Rock, Mo., by a broken rail. Two trainmen and a passenger were hurt.

On the night of the 11th a freight train on the Indiana, Bloomington & Western road struck a broken rail near Sandusky, O., and 10 cars were thrown from the track.

On the morning of the 12th a passenger train on the Wabash, St. Louis & Pacific road struck a broken rail near Olmstead, Ill., and two cars were thrown from the track and down a bank. The wrecked cars caught fire and were destroyed. Twelve passengers were injured.

On the evening of the 14th several cars of a freight train on the Hannibal & St. Joseph road were thrown from the track at New Cambria, Mo., by a broken rail. The conductor was killed and two other trainmen hurt.

On the afternoon of the 15th a passenger train on the Hannibal & St. Joseph road struck a broken rail at Chariton River, Mo., and two cars were thrown from the track. One of them was thrown over against the engine of a freight train standing on a siding, smashing in one side of the cab and killing the engineer.

On the morning of the 16th a freight train on the Rochester & Pittsburgh road struck a broken rail near Scottsville, N. Y., and five cars were thrown from the track.

On the afternoon of the 16th a freight train on the Indiana, Bloomington & Western road was thrown from the track near Mapleson, Ind., by a broken rail. The fireman was killed and the engineer hurt.

On the morning of the 17th a passenger train on the Ohio & Mississippi road struck a broken rail near Lebanon, Ill., and several cars were thrown from the track, one upsetting. A passenger was killed and eight others hurt.

On the night of the 17th a freight train on the Chicago & Northwestern road struck a broken rail near Clinton, Ia., and the caboose and one car went down a high bank. A brakeman was killed; the conductor and 22 passengers in the caboose were hurt.

On the morning of the 19th a passenger train on the Central Pacific road struck a broken rail near Colfax, Cal., and

several cars were thrown from the track, injuring five passengers.

On the night of the 20th a passenger train on the Vandalia Line struck a broken rail near Greencastle, Ind., and five cars were thrown from the track. Two trainmen were slightly hurt.

On the morning of the 21st a freight train on the Vandalia Line struck a broken rail near Pieron, Ill., and 14 cars were piled up in a bad wreck.

On the morning of the 22d a car of a passenger train on the Cleveland, Columbus, Cincinnati & Indianapolis road was thrown from the track near Crestline, O., by a broken rail.

On the night of the 22d the engine and one car of a passenger train on the Sioux City & Pacific road were thrown from the track near Bell Creek, Neb., by a broken rail.

On the morning of the 23d a freight train on the Illinois Central road struck a broken rail near Marcus, Ia., and 16 cars were thrown from the track.

On the morning of the 23d a passenger train on the New York, Lake Erie & Western road struck a broken rail near Mt. Morris, N. Y., and one car was thrown from the track.

On the morning of the 24th a freight train on the Wabash, St. Louis & Pacific road struck a broken rail near Wabash, Ind., and 12 cars were thrown from the track.

On the night of the 25th a passenger train on the St. Louis, Keokuk & Northwestern road was thrown from the track near Keokuk, Ia., by a broken rail.

Near midnight on the 27th a passenger train on the Wabash, St. Louis & Pacific road struck a broken rail near Wabash, Ind., and four cars were thrown from the track and upset. A porter and four passengers were hurt.

On the evening of the 29th a passenger train on the Chicago & Alton road struck a broken rail near Bloomington, Ill., and four cars were thrown from the track.

On the night of the 30th a passenger train on the International & Great Northern road was thrown from the track near Overton, Texas, by a broken rail.

On the same night another passenger train on the same road was thrown from the track near Mineola, Texas, by a broken rail. A passenger was killed.

DERAILMENTS, BROKEN FROG.

On the afternoon of the 10th the engine of a passenger train on the New York Central & Hudson River road was thrown from the track at Germantown, N. Y., by a defective frog.

On the evening of the 24th several cars of a freight train on the New York, Lake Erie & Western road were thrown from the track at Ramapo, N. Y., by a broken frog.

DERAILMENTS, BROKEN SWITCH-ROD.

On the evening of the 1st four cars of a passenger train on the Savannah, Florida & Western road were thrown from the track at Town Station, Ga., by a broken switch-rod.

On the morning of the 4th three cars of a freight train on the Louisville & Nashville road were thrown from the track at Cedar Hill, Ky., by a broken switch-rod.

On the morning of the 7th a passenger train on the New York Central & Hudson River road was thrown from the track at Black Rock, N. Y., by a broken switch-rod. The baggageman was hurt.

On the morning of the 24th two cars of a passenger train on the Lake Shore & Michigan Southern road were thrown from the track in Adrian, Mich., by the breaking of a switch-rod.

DERAILMENTS, BROKEN BRIDGE.

On the night of the 16th a freight train on the Troy & Boston road broke through a bridge at Petersburg, N. Y., and eight cars were down and were wrecked.

On the night of the 26th a freight train on the International & Great Northern road broke through a bridge near Willis, Tex., and three cars were down into the creek. A trainman went down and was drowned. One abutment of the bridge had been partly washed out by a freshet.

DERAILMENTS, SPREADING OF RAILS.

On the morning of the 1st a car of a passenger train on the Chicago, Milwaukee & St. Paul road was thrown from the track near Sleepy Eye, Dak., by the spreading of the rails. Three passengers were slightly hurt.

On the night of the 1st several cars of a freight train on the Western North Carolina road were thrown from the track at Third Creek, N. C., by the spreading of the rails. A brakeman was hurt.

On the night of the 5th a freight train on the Gulf, Colorado & Santa Fe road was thrown from the track near Cameron, Tex., by the spreading of the rails.

On the 9th the engine of a passenger train on the South Carolina road was thrown from the track at Bath, S. C., by the spreading of the rails. The engineer was hurt.

On the morning of the 11th the engine and 10 cars of a freight train on the Western North Carolina road were thrown from the track near Third Creek, N. C., by the spreading of the rails. The fireman was badly hurt.

On the morning of the 11th a passenger train on the Austin & Northwestern road was thrown from the track near Austin, Tex., by the spreading of the rails.

On the morning of the 14th a passenger train on the Windsor & Annapolis road was thrown from the track near Mt. Uniacke, N. S., by the spreading of the rails. Three cars were upset and two passengers hurt.

On the morning of the 17th a passenger train on the Manchester & Keene road was thrown from the track at Harrisville, N. H., by the spreading of the rails.

On the morning of the 18th several cars of a freight train on the Rochester & Pittsburgh road were thrown from the track near Peth, N. Y., by the spreading of the rails.

On the night of the 18th a freight train on the Texas & Pacific road was thrown from the track near Shreveport, La., by the spreading of the rails.

On the morning of the 21st several cars of a freight train on the South & North Alabama road were thrown from the track near Birmingham, Ala., by the spreading of the rails.

On the evening of the 22d a car of a stock train on the New York Central & Hudson River road was thrown from the track near Fairport, N. Y., by the spreading of the rails.

On the afternoon of the 25th a car of a passenger train on the East Tennessee & Western North Carolina road was thrown from the track near Hampton, Tenn., by the spreading of the rails. The car rolled down a high bank into the Doe River and was wrecked, injuring 19 passengers.

On the morning of the 29th several cars of a freight train on the Burlington, Cedar Rapids & Northern road were thrown from the track near Toddville, Ia., by the spreading of the rails. A brakeman was killed and another hurt.

DERAILMENTS, BROKEN WHEEL.

Early on the morning of the 9th three cars of a freight train on the New York, Lake Erie & Western road were thrown from the track in Rochester, N. Y., by a broken wheel.

On the afternoon of the 18th a car of a passenger train on the Michigan Central road was thrown from the track near Hastings, Mich., by a broken wheel. Two passengers were slightly hurt.

On the night of the 27th several cars of a milk train on the New York, Susquehanna & Western road were thrown

from the track near Pompton, N. J., by a broken wheel, and went down a bank. Some 800 cans of milk were split into the Pequannock River and wasted.

DERAILMENTS, BROKEN AXLE.

On the morning of the 3d several cars of a passenger train on the Troy & Greenfield road were thrown from the track in North Adams, Mass., by a broken axle.

On the evening of the 8th two cars of a freight train on the Pennsylvania Railroad were thrown from the track at Anderson, Pa., by a broken axle.

On the night of the 8th several cars of a freight train on the Pennsylvania Railroad were thrown from the track by a broken axle near Clark's Ferry, Pa. The wreck was run into by a following train a few minutes later.

Very early on the morning of the 13th several cars of a freight train on the Pennsylvania Railroad were thrown from the track near Saxonburg, Pa., by a broken axle.

On the afternoon of the 16th several cars of a freight train on the Central Railroad of New Jersey, were thrown from the track at Cranford, N. J., by a broken axle.

On the afternoon of the 16th the engine of a passenger train on the Rensselaer & Saratoga road was thrown from the track near Castleton, Vt., by a broken axle.

On the morning of the 22d a freight train on the Louisville & Nashville road was thrown from the track near Pensacola, Fla., by a broken axle.

On the morning of the 26th the engine of a freight train

Durham Furnace, at Reigelsville, N. J., was thrown from the track on a bridge over a highway by ice packed down on the rails, and fell into the road below with several coal cars on top of it. The engineer was badly hurt.

On the morning of the 24th two cars of a passenger train on the New York, Lake Erie & Western road were thrown from the track at Andover, N. Y., by snow packed down on the track.

On the afternoon of the 30th a passenger train on the Denver & Rio Grande road was delayed by snow near Crested Butte, Col. Leaving the train behind, the engine went ahead to clear the track. It had gone near four miles when a heavy snow-slide came down the mountain, carrying the engine bodily with it for some distance from the track, and leaving it buried under 30 ft. of snow.

DERAILMENTS, ACCIDENTAL OBSTRUCTION.

On the morning of the 18th several cars of a freight train on the Cumberland Valley road were thrown from the track near Chambersburg, Pa., by a brake beam falling on the track.

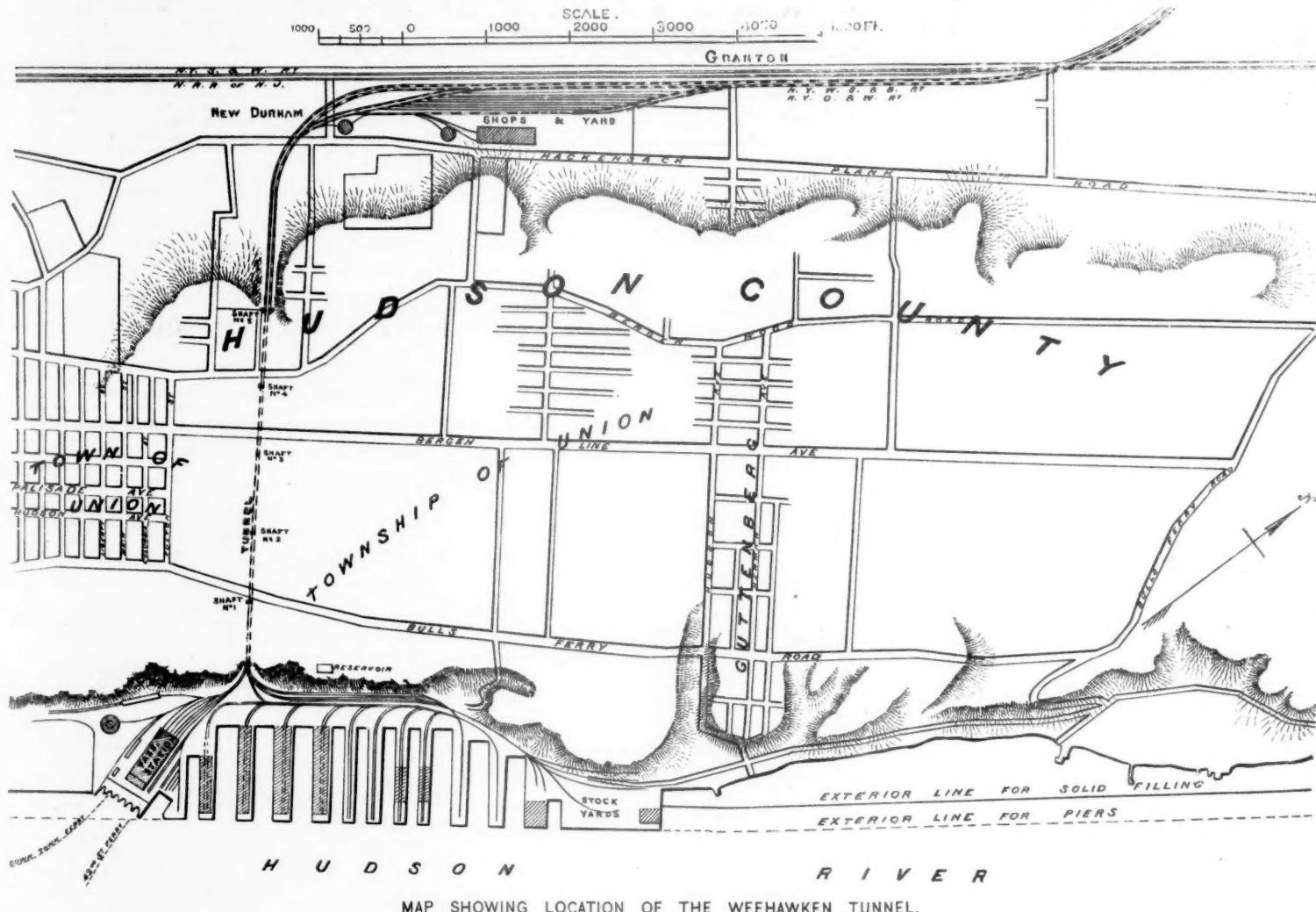
On the morning of the 28th a passenger train on the Denver & Rio Grande road ran into a rock which had fallen on the track in Black Cañon, Col., and the engine was thrown from the track and wrecked.

DERAILMENTS, MISPLACED SWITCH.

On the night of the 6th a passenger train on the Long

stopped without injury. In the meantime the wreck of the other cars caught fire and burned very rapidly, so that many of the passengers were unable to escape from the wreck and were burned to death. The total number of those killed and burned is believed to be 21 in all, two trainmen, 17 passengers and two unknown men, believed to be tramps stealing a ride. Of those who escaped two trainmen and 18 passengers were hurt, most of them not severely. It is, of course, uncertain how many of those burned were killed or injured before the wreck took fire, as all the bodies found were burned almost beyond recognition. It appears that when the engines were detached the air brakes were taken off and the hand brakes set, but both brakemen got off the train, one to uncouple the engines and one to relight his lamp, it is said. Why the train started is uncertain; the company's theory is that the hand brakes were thrown off purposely by men who intended to run the train back and rob the passengers, and that these men had watched their opportunity while the brakemen were away from their posts. According to this theory the two unknown men found dead were the train robbers. It is said that two others, apparently tramps, were seen about the train, and that they escaped from the wreck and disappeared in the darkness.

On the afternoon of the 23d as three coal trains coupled together were going down a very steep grade on the George's Creek & Cumberland road near Pompey Smash, Mich., they attained so great a speed as to become unmanageable, and



MAP SHOWING LOCATION OF THE WEEHAWKEN TUNNEL.

on the Conotton Valley road was thrown from the track near Bedford, O., by a broken axle.

About noon on the 27th several cars of a freight train on the Delaware, Lackawanna & Western road were thrown from the track near East Newark, N. J., by a broken axle.

On the evening of the 31st several cars of a freight train on the Grand Trunk road were thrown from the track near Oshawa, Ont., by a broken axle.

DERAILMENT, BROKEN TRUCK.

On the morning of the 3d three cars of a freight train on the North Carolina road were thrown from the track near Goldston, N. C., by a broken truck.

DERAILMENT, WIND.

On the morning of the 29th a passenger car on the Denver Circle road was blown from the track in Denver, Col., by a wind storm and wrecked, injuring five passengers.

DERAILMENTS, LAND-SLIDES.

On the morning of the 29th a passenger train on the Denver & Rio Grande road ran into a land-slide in Brown's Cañon, Col., and was thrown down a high bank into the Arkansas River.

On the evening of the 30th a train on the Louisville & Nashville road ran into a land-slide near Anchorage, Ky., and the engine and three cars were thrown from the track.

DERAILMENTS, SNOW.

On the morning of the 12th a snow-plow and two engines on the Burlington, Cedar Rapids & Northern road ran off the track in a snow-drift near Traer, Ia. A fireman was killed and an engineer hurt.

On the night of the 13th a passenger train on the Chicago, St. Paul, Minneapolis & Omaha road was thrown from the track in a snow-drift near Glover, Wis. The engineer and fireman were hurt.

On the evening of the 18th the engine of a freight train on the Atlantic & Pacific road was thrown from the track near Ft. Wingate, Ar., in a snow-bank.

On the morning of the 22d the engine of a passenger train on the Rensselaer & Saratoga road was thrown from the track near Glen's Falls, N. Y., by ice on the rails, and upset, injuring the fireman fatally.

On the morning of the 24th a shifting engine belonging to

Island road was thrown from the track in Sag Harbor, N. Y., by a misplaced switch.

On the evening of the 9th a passenger train on the Cincinnati, Indianapolis, St. Louis & Chicago road was thrown from the track in Indianapolis, Ind., by a misplaced switch.

On the evening of the 10th a passenger train on the Chicago, Burlington & Quincy road was thrown from the track in Ottawa, Ill., by a misplaced switch.

On the night of the 18th the engine and one car of a passenger train on the South & North Alabama road were thrown from the track at Warrior, Ala., by a misplaced switch.

On the morning of the 20th the engine and one car of a passenger train on the Chicago & Alton road were thrown from the track at Roodhouse, Ill., by a misplaced switch.

On the night of the 21st a passenger train on the Kansas City, St. Joseph & Council Bluffs road was thrown from the track at Gibson's Crossing, Mo., by a misplaced switch. Three passengers were slightly hurt.

On the morning of the 26th a freight train on the New York, Ontario & Western road was thrown from the track at Oxford, N. Y., by a misplaced switch.

MISCELLANEOUS DERAILMENTS.

On the morning of the 12th a passenger train on the Baltimore & Potomac road was entering the station in Baltimore the brakes failed to stop it in time and the engine went off the end of the track. The engine was badly damaged and some 10 ft. of the station wall knocked out.

On the morning of the 18th a passenger train on the Indianapolis & St. Louis road was thrown from the track near Hillsboro, Ill., where section hands had taken up a rail for repairs. They had set out a signal, but not far enough.

About 1 o'clock on the morning of the 20th a passenger train on the Southern Pacific road stopped at Tehachapi, Cal., to detach the helping engine which had come with it up the grade. While both engines were detached, the train started off in some unexplained way down the grade of 120 feet to the mile, and was soon running at a very high speed.

After running about four miles the two sleeping cars, with the mail, baggage and express cars, jumped the track at a curve and went down a bank about 15 feet high, piling up in bad wreck, while the passenger coach and smoking car broke loose and kept on some two miles further, where they

finally jumped the track at a curve, two engines and 60 cars going down a bank 100 feet, and finally landing in a very bad wreck on the track of the Cumberland & Pennsylvania road.

Three trainmen were killed outright and three more died afterward, a seventh being badly hurt. It is customary to send three trains together down this grade, and no accident ever happened there before. In this case the engineers of the first and third train tried to frighten the engineer of the second train, a very cautious man, and allowed the speed to become so great that they were finally unable to hold up. The two engines and the cars that left the track were piled up in a most complete wreck.

On the afternoon of the 27th a passenger train on the Chicago & Northwestern road was thrown from the track near Charlotte, Ia., where trackmen had taken up a rail for repairs. The engineer and fireman were slightly hurt.

On the afternoon of the 31st the engine and nine cars of a freight train on the East Tennessee, Virginia & Georgia road were thrown from the track on a trestle near Cochran, Ga., where some trackmen had taken up a rail to replace it with a new one. The engine was badly broken and the engineer hurt. The trackmen had a signal out but not far enough.

UNEXPLAINED DERAILMENTS.

On the morning of the 1st some cars of a coal train on the Pennsylvania Railroad ran off the track near Crosswicks Bridge, N. J., blocking the road two hours.

On the morning of the 2d a freight train on the Atlanta & Charlotte Air Line road ran off the track on the trestle bridge over the Catawba River near Gastonia, N. C., and knocked down four bents, seven cars going down into the water.

On the afternoon of the 2d several cars of a freight train on the Norwich & Worcester road ran off the track near Montville, Conn., doing a little damage.

On the morning of the 3d several cars of a freight were thrown from the track near Bunker Hill, Ill., on the Indianapolis & St. Louis road.

On the 3d the engine of a passenger train on the Wabash, St. Louis & Pacific road ran off the track near Clevis, Ill. The fireman was hurt.

On the night of the 3d several cars of a freight train on the Louisville & Nashville road ran off the track near Guthrie, Ky. A brakeman was killed.

On the night of the 7th the milk train on the New York Susquehanna & Western road ran off the track near Quarryville, N. J., blocking the road three hours.

On the morning of the 12th some cars of a freight train on the Eastern road ran off the track at Beverly Farms, Mass., blocking the road two hours.

On the evening of the 15th a car of a passenger train on the Canada-Atlantic road ran off the track near Glenhook, Ont., and upset, injuring two passengers.

Very early on the morning of the 16th a passenger train ran off the track in Lancaster, Pa., on the Pennsylvania Railroad.

On the morning of the 16th a passenger train on the Wabash, St. Louis & Pacific road ran off the track near Millard, Mo. The conductor and five passengers were hurt.

On the morning of the 17th a freight train ran off the track at North Fownal, Vt., on the Troy & Boston road.

On the morning of the 18th several cars of an emigrant train on the Central Pacific road ran off the track at Cape Horn Mills, Cal., killing a brakeman and injuring a passenger.

On the morning of the 23d a passenger train on the Canada Southern road ran off the track near St. Thomas, Ont., and two cars upset, injuring two passengers.

On the morning of the 23d the engine of a construction train on the Denver & Rio Grande Western road ran off the track near Pleasant Valley Junction, Utah, and upset down a high bank. Two trainmen were killed and two hurt.

On the morning of the 27th several cars of a freight train on the Pennsylvania Railroad ran off the track in Plainsboro, N. J., and were wrecked.

On the morning of the 27th two cars of a freight train on the Central Vermont road ran off the track in Winooski, Vt. One of the cars was loaded with oil, which caught fire, and ten freight cars and a large storehouse adjoining the track were destroyed.

On the afternoon of the 30th some cars of a freight train

ran on the Pittsburgh, Cincinnati & St. Louis road broke a parallel rod when near Newark, O., tearing up one side of the engine. The fireman jumped and was killed.

On the afternoon of the 24th a driving wheel broke under the engine of a passenger train on the Chicago, Burlington & Quincy road near Mendota, Ill. The engine did not leave the track, but a piece of the wheel was thrown into the cab, injuring the engineer.

SUMMARY.

This is a total of 168 accidents, in which 55 persons were killed and 199 injured; an approximate daily average of 5½ accidents, 1½ killed and 6½ injured.

Thirty of the killed and 61 of the injured were railroad employés; 25 of the killed and 138 of the injured were passengers or others riding on the trains. Of the whole number of casualties 91, or 56.8 per cent., were to employés, and 163, or 64.2 per cent., to passengers.

The total number, both of accidents and casualties, was much above the monthly average of last year; but the month was a very bad one for railroads.

The Weehawken Tunnel.

The engravings herewith are a map and profile of the tunnel of the New York, West Shore & Buffalo and the New York, Ontario & Western railroads, which is at Weehawken, N. J., opposite New York. It passes through what is known as Bergen Hill, composed of hard trap rock. The tunnel is 3,985 ft. long, with cuts of 300 and 3,000 ft. in the approaches on the east and west sides. The east end of the tunnel is enlarged, as shown by the section in the right side of the profile, for the accommodation of the curved yard

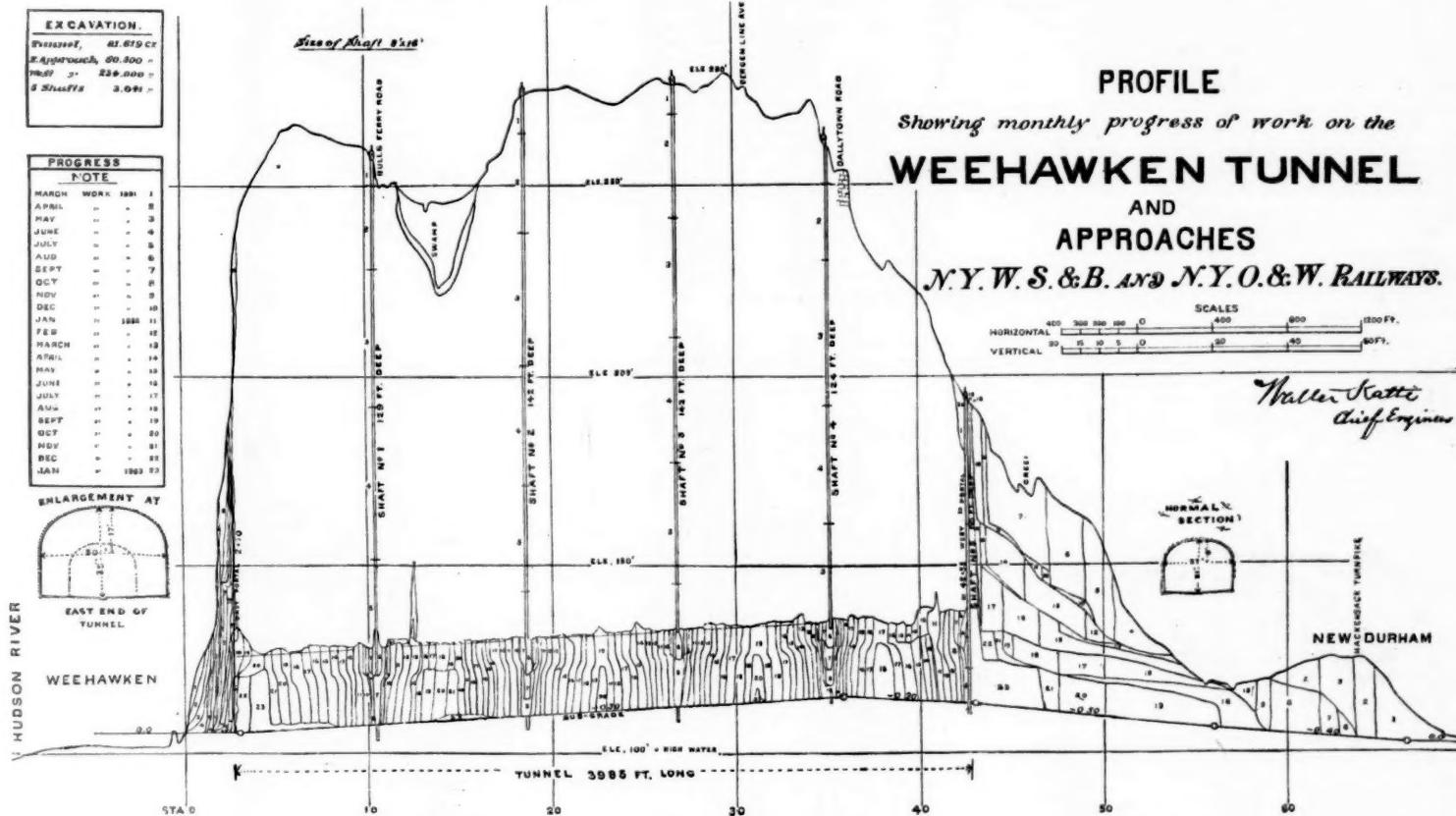
the headings met in January, 1883. The accompanying table—for which, and for the drawings from which the engravings were made, we are indebted to Mr. Walter Katte, Chief Engineer of the line—show the force employed and the rate of progress of the work.

Contributions.

Some Seasonable Hints To Roadmen.

To THE EDITOR OF THE RAILROAD GAZETTE:

It is none too early for those who have the care of tracks, road-beds and bridges to prepare for the usual spring freshets and ice gorges. That section of country about Cleveland, Ohio, has already experienced the mid-winter rush of waters which every winter brings to some portion of the country, but there winter freshets are local and do not affect the country in general after the manner of the final spring break-up. The sufferers from the late floods at Cleveland and vicinity feel that they are out of the woods, for this or the coming season, thinking that lightning never strikes twice in one place; but it is hardly safe to base their hopes of future safety on the fact that they have *had their flood*. If it were later in the season, there would be less danger of a spring freshet; but there is yet time for the elements to work up another disaster in the same localities before spring has finally thrown winter out of her lap; and, as a skipper would say, it is best to "keep a weather eye out" until the swallows make their appearance, without regard to what has already happened. The present win-



on the Northern Pacific road ran off the track near Chehalis, Wash., Ter., and the caboose was wrecked.

On the afternoon of the 30th the engine of a coal train on the East Tennessee, Virginia & Georgia road ran off the track near Coal Creek, Tenn., and upset, injuring the engineer and another man on the engine.

On the afternoon of the 31st the engine of a freight train on the Western & Atlantic road ran off the track near Ringgold, Ga., blocking the road three hours.

On the evening of the 31st a car of a freight train on the Chicago, Burlington & Quincy road ran off the track at North Aurora, Ill., blocking the road four hours.

BOILER EXPLOSIONS.

On the evening of the 18th a locomotive on the Mansfield Tap road exploded its boiler while standing at the station in Mansfield, La. The engine was completely wrecked, the fireman and a brakeman killed, two bystanders fatally hurt and five others less severely injured.

On the afternoon of the 30th a shifting engine on the Lehigh Valley road exploded its boiler at East Mauch Chunk, Pa. The boiler gave way at the side, just forward of the fire-box, and the engine was pretty well wrecked. The engineer and two brakemen were hurt. The engine was about 20 years old, but was believed to be in good order.

OTHER ACCIDENTS.

On the morning of the 10th the engine of a passenger train on the Lake Shore & Michigan Southern road broke a driving wheel when near Genoa, O., but did not leave the track.

At noon on the 12th the engine of a passenger train on the Cleveland, Tuscarawas Valley & Wheeling road broke an axle near New Portage, O., but did not leave the track.

On the night of the 15th an axle broke under a car of a passenger train on the New York, Lake Erie & Western road near Narrowsburg, N. Y., but the car did not leave the track.

On the morning of the 16th the engine of a passenger train on the Rensselaer & Saratoga road broke a connecting rod near Salem, N. Y., and was damaged.

On the afternoon of the 16th the engine of a passenger train on the Fitchburg road broke a driving wheel near Watertown, Mass., but did not leave the track.

On the morning of the 24th the engine of a passenger

and depot tracks which run into it at that point. From the map it will be seen that the east end of the tunnel is very near the Hudson River, and the ferry slips from which it is proposed to run boats to some point in the lower

ter has thus far been of unusual severity, and we may reasonably expect much trouble when the break occurs. The elements are beyond our control when on the rampage, but we can at times, by the exercise of proper precaution, turn

WEEHAWKEN TUNNEL FORCE ACCOUNT.

Number of months from commencement.....	MONTHS OF—					AVERAGE FORCE PER SHIFT.
	From Shaft 1, east and west.	From Shaft 2, east and west.	From Shaft 3, east and west.	From Shaft 4, east and west.	From Shaft 5, east and west.	
10 December 1881.....	52 1 4 27 6 52 1	4 23 4 48 1 4	27 6 46 1 4 15 3 51 1 4 23 3	Drills.....	Miners.....	
11 January.....	48 1 4 31 7 48 1 4 32 8 48 1 4 26 5 42 1 4 26 4	2 35 7 48 1 3 34 8 48 1 3 32 6 48 1 3 13 2	Foremen.....	Mechanics.....		
12 February.....	48 2 3 35 7 48 2 3 35 7 54 1 3 34 8 54 1 4 33 7 54 1 3 17 2	2 33 7 54 2 3 32 7 45 2 3 31 7 46 2 3 21 3	Foremen.....	Mechanics.....		
13 March.....	54 2 3 33 7 54 2 3 35 7 54 1 3 34 8 54 1 4 33 7 54 1 3 17 2	2 32 7 54 2 3 31 7 45 2 3 30 7 46 2 3 21 3	Foremen.....	Mechanics.....		
14 April.....	46 2 3 28 4 46 2 3 31 7 46 2 3 32 7 45 2 3 31 7 46 2 3 21 3	2 31 7 54 2 3 30 7 45 2 3 30 7 45 2 3 21 3	Foremen.....	Mechanics.....		
15 May.....	53 2 3 36 5 53 2 3 38 7 54 2 3 41 8 53 2 3 40 8 53 1 3 24 3	2 30 7 53 2 3 39 8 49 2 3 39 8 53 1 3 24 3	Foremen.....	Mechanics.....		
16 June.....	52 2 3 41 6 41 2 3 42 8 47 2 3 42 8 47 2 3 42 8 47 1 3 25 3	2 30 7 53 2 3 39 8 49 2 3 39 8 53 1 3 25 3	Foremen.....	Mechanics.....		
17 July.....	47 2 3 39 4 47 2 3 38 8 48 2 3 42 8 47 2 3 42 8 47 1 3 21 3	2 30 7 53 2 3 39 8 48 2 3 39 8 53 1 3 21 3	Foremen.....	Mechanics.....		
18 August.....	54 2 3 37 6 54 2 3 44 9 54 2 3 45 9 54 2 3 42 7 50 1 3 14 2	2 30 7 53 2 3 39 8 49 2 3 39 8 53 1 3 14 2	Foremen.....	Mechanics.....		
19 September.....	49 2 3 42 8 48 2 3 44 9 49 2 3 45 9 54 2 3 42 7 50 1 3 15 2	2 30 7 53 2 3 39 8 50 1 3 32 5 44 1 3 15 2	Foremen.....	Mechanics.....		
20 October.....	50 2 3 51 9 51 2 3 33 6 12 1 3 47 8 32 1 3 28 3 26 1 3 15 2	2 30 7 53 2 3 39 8 51 1 3 32 6 12 1 3 28 3 26 1 3 15 2	Foremen.....	Mechanics.....		
21 November.....	49 2 3 36 6 52 1 3 22 3 34 1 2 16 2 34 1 3 15 1 25 4 15 55 ..	2 30 7 53 2 3 39 8 52 1 3 32 6 12 1 3 28 3 26 1 3 15 2	Foremen.....	Mechanics.....		

NOTE.—The tunnel has been taken out heretofore to normal width of 27 feet except from station 39+80 to 42+55, where it was taken out to enlarged section of 32 feet in width for arching with brick. Drills run by compressed air. The battery consisted of 12 vertical steam boilers and 10 air compressors, located in one building at the eastern portal of the tunnel, the compressed air being delivered by pipes laid over the top of the tunnel and down the shafts.

part of the city and to Forty-second street. The docks and stock yards will be located adjoining the ferry. A shop for temporary repairs and a yard with side tracks are near the west end.

The work on the tunnel was begun in March, 1881, and them aside in their mad career, and render them comparatively harmless. It sometimes happens that immense bodies of snow and ice are melted gradually and are let down easily by pleasant, sunny days and mild, thawing winds, unaccompanied by storms, and no damage is done; but we have

no right to base our plans of operation on the possibilities of an easy break-up. If we do, the chances are that we shall "get left," and it is better to be governed by a belief that we shall never have any more mild breaks and be always apprehensive of danger and act accordingly. This will relieve those who are responsible of a great deal of worry and anxiety, and a sense of duty performed "doth good like a medicine."

A year ago it was hinted in these columns that dynamite or some other explosives might be used to good advantage in many places to prevent ice gorges, and since then a great many ice jams have been successfully removed by the use of explosives, notably in clearing passages for ferry boats and clearing channels of ice where bridges were in danger. Those in charge of road-beds in localities where there is any possibility of trouble from ice or high water will do well to examine streams above and below, to make sure that ice and driftwood have a free passage when the time comes for it to move, which may be when least expected. For this reason it is best to keep a trusty watch at all places where there is a possibility of trouble, and let no train pass a point where there is a shadow of a doubt of safety. These little precautions are not expensive, and may prevent many serious disasters.

In cases of snow blockades it would seem that some of the steam excavators might be used to advantage, as in removing snow from cuttings, cleaning out yards and depot grounds, etc. A large scoop might be made for the purpose and much snow removed in a shorter time than by hand shoveling. One source of danger is from the ditches being packed with snow in cuttings, which allows water to flow over the rails and thus becoming suddenly frozen has caused many serious mishaps. The excavator might be made to render good service in clearing ditches if properly rigged for the purpose. In many places, if trackmen are not crowded with other work, they will best earn their wages by clearing snow from ditches where it is possible that an overflow might occur. Even if the snow melts away gradually, the drainage being obstructed may turn enough water on the track to cause mischief. It may be argued that if the ditches are thoroughly cleared now, they will be filled again before they will be needed. Very likely they will, but the old snow, being hard, does not wear away as rapidly as the new, and channels cut in the old snow will be cleared of fresh filling by the water itself as soon as the new snow begins to melt. By giving this matter attention in time much trouble will be avoided and perhaps life and property saved.

It is not safe to conclude that after the snow and ice are gone that all danger from floods is over and no more care need be taken in that direction. The spring rains must be provided for, and in some sections are as much to be dreaded as snow and ice.

W. M. Steele, Union Depot Co. of St. Louis.
H. H. Towle, Maine Central.
A. Traynor, Union Pacific.
G. S. Venn, Indianapolis Union Ry.
John Walsh, Union Depot, Atchison, Kan.
P. Walsh, Atchison, Topeka & Santa Fe.
H. A. Winter, Illinois Central.
W. R. Wilson, Canadian Pacific.

After a full discussion of the subject of excess baggage the following resolution was adopted:

"Resolved, That each line shall obtain a written opinion from its general solicitor relative to the validity of a release for excess baggage."

Mr. P. Walsh, of the Atchison, Topeka & Santa Fe railroad, proposed the adoption of a straight check, with the name of initial and terminal roads stamped upon the metal; the destination and route to be indicated by a card inserted in the slot for its protection.

This subject covered by it was referred to a committee of five. The President appointed as such committee Messrs. McWade, Post, Traynor, Marston and Winter.

The following resolution was proposed by Mr. Morton and adopted:

"Resolved, That it is the sense of this meeting that it is highly desirable that the limit of weight of single pieces of baggage, emigrant business being excepted, should be fixed at 250 lbs. for all lines, no exception to be made in favor of advance agents for theatrical companies; three months notice being given to the traveling public. That the General Passenger Agents be requested to take up this subject in their National Association and discuss it and to acquaint their several general baggage agents with their decision and authorize them to take action in accordance therewith."

Mr. Bentley offered the following resolution, which was adopted:

"Resolved, That sufficient time be required from passengers for the checking of baggage; that is, that baggage must be at the station a reasonable time before the departure of the train by which it is to be forwarded; and that the public be notified through the medium of the press of the requirements of the Association in this respect."

The special committee on Foreign Excess Baggage, Messrs. J. D. Marston, J. Van Smith and N. A. Phillips, presented the following recommendation:

"First.—The company collecting excess will give passengers a receipt and attach a tag to strap check showing where from and to excess has been collected and amount of such collection, which receipt at the end of each month shall be reported by the auditor of said company, the same as though it were a through ticket giving each line interested the proportion.

"Second.—As a check against the issuing company, train baggage men will be furnished with blanks to report all foreign excess tags on baggage received by them, and forward said reports to general baggage agent, who at close of each month will forward to auditor of his road, that he may hold them as a check against the company issuing book."

The report was adopted, and it was agreed that it should be submitted to the next meeting of the General Passenger Agents' Association.

Mr. J. Van Smith, Chairman of the Committee on the Handling of Baggage by Transfer Companies, stated that the committee had not prepared a formal report, but that after consultation with the management of different lines it had been concluded that any change in the present mode of handling freight by transfer companies would be unadvisable.

The committee was continued.

A resolution was passed at a previous meeting of the Association calling upon members to be prepared to report at this meeting the average weight of baggage per ticket sold on their respective lines. Eight members responded to this request; Mr. Freeman reporting an average of 103 lbs.; Mr. Winter, 35 $\frac{1}{2}$ lbs.; Mr. Allen, 103 lbs.; Mr. Phillips, 92 lbs.; Mr. Walsh, 57 lbs.; Mr. Smith, 22 lbs.; Mr. McWade, 78.9 lbs.; and Mr. Stareing, 102 lbs.

It was suggested that members who had not prepared their averages should do so before the next meeting.

Some remarks were made in regard to the storage system, the members who had it in use stating that it worked very satisfactorily.

The following officers were elected: President, J. Van Smith; Vice-President, J. L. Freeman; Secretary, Mason B. Starring.

The Association will hold its next meeting at the Tremont House, Chicago, on the second Wednesday in August of the present year.

Heating and Lighting Cars and the Construction of Car Seats.

[Report of the February Meeting of the Car-Builders' Club.]

The meeting was held Feb. 15, at the rooms No. 113 Liberty street, New York. The President, Mr. Leander Garey, announced that the subject for discussion would be the heating and lighting of railroad cars and the design and construction of car seats.

HEATING CARS.

Mr. J. HALL Dow, of the Union Brass Manufacturing Company of Chicago, read a paper on the "Heating of Railroad Coaches." He called attention to the difficulty of the problem, and stated that of the various means employed hot-water circulating in pipes near the floor had been the most efficient. But the high price of the apparatus required had been a great objection to its use. The necessity of using a pressure gauge and the presence about the heater of many doors he considered objectionable because if they are left open with a view of checking the fire the gasses from the combustion chamber are liable to escape into the car. The Searle heater, patented in 1881, requires no pressure gauge nor even a water glass, and by the use of an ash chute the opening of any lower door is unnecessary. If the circulation around the car is rapid less fuel will be required to reheat it. To secure this four lines of straight pipe should be placed against the truss plank on each side of the car extending from the end farthest from the heater to two-thirds of the distance toward the same, crossing over to the opposite side back of the truck nearest the heater. The same amount of pipe should be put upon that side. Then by running two pipes to the end at which the heater is placed, returning and crossing back with both pipes in the same box, the hot water will very materially help to keep the return water warm. Some parties prefer to place the pipes under the seats, and if that is done, the hot water should be allowed to flow at once through a straight pipe to the furthest end of the car, away from the heater and return through the bent pipes and cross over just back of the truck nearest the heater; then up through the floor on the opposite side, run one straight pipe to the end away from the heater and returning through the bent pipe as before, and return to the heater in the same box with the outflow steam. By this means more pipe can be put in the car, and a more even temperature maintained. By causing the water to pass through a special fitting below the roof of the car instead of through the drum on top, a pressure gauge is rendered un-

necessary and a more rapid circulation is obtained, besides avoiding any blowing of salt brine out of the drum. By means of a register collar around the pipe the draft is checked without escape of gas into the car. With the cup grate and use of the ash chute passing through the floor of the car, all the fire may be removed before the coil can melt down, and at other times the ashes are removed without any objectionable dust.

President GAREY—Anything that will make our cars more safe from fire in case of accident will be a public benefit. I would ask whether the outer air would not be liable, in case the door were left open, to make a sort of blast furnace of the heater with a tendency to blow it up.

Mr. DOW—We lock that and allow the porter to clear out his ashes only when he gets to the station.

Mr. SPEER wanted to hear something about ventilating cars, and by what means Mr. Searle ventilates when he heats with hot-water pipes.

Mr. DOW—The Creamer ventilator would probably be the best that could be adopted. On the Alton road what is called the "Flagg ventilator" is used. It is a sheet iron casing set around the stove and open at the bottom. There is also one above which passes out of the window, and through these, by the action of the heated air, the impure air is drawn from the bottom of the car and passes out of the window.

Mr. CREAMER—Everybody in this room knows as much about the Creamer ventilator as I do. But a new system which is now used consists of a perforated plate on the end of the car over the window, with little shields back of each perforation by which the incoming air is thrown upwards, so that the passengers who sit near the end of the car will not notice that there is an opening there. That system, combined with exhaust ventilators in the clear-story, makes about as efficient a plan of ventilation as it is possible to produce.

Mr. SPEER—If you place a row of pipes along the side of a car you can only heat by contact with the air. You must circulate the air against the coil of pipes, and then it must rise to the ceiling and descend again to the floor, and keep circulating until all the air is warm. If a window at the end is open the passengers suffer with cold feet unless the air which enters is heated. My plan is to bring the air in, pass it around a heated stove and along the bottom of the car by a tin pipe, and I contend that a car can be heated in this way with one-half the fuel and in one-quarter the time required to heat it with a steam pipe. In twenty minutes a car can be thoroughly heated and the air would be pure. The warm air rises and forces the foul air out of the ventilators.

The PRESIDENT—The most desirable object to attain is to lessen the danger from fire either by removing the heat generators from the car entirely or having some mode of heating that will insure the safety of passengers in case of accident.

Mr. SPEER—Hot water is no safer than hot air. The proper way to avoid danger is to take better precautions in running trains.

Mr. DOW—How could Mr. Speer warm a car standing still.

Mr. SPEER—With two hot-air heaters, one at each end of the car, it can be heated as rapidly as with one hot-water heater, because the hot-air circulates more rapidly from the heater into the car than the hot-water does.

Mr. PHILIPPI—I am connected with the Reading Railroad and we have about five hundred cars which have the heaters underneath. There is no danger of any of our cars burning up in case of accident. The car in which Senator Wagner perished had a Baker heater. You can heat a car with steam, but we all know that you can parboil the passengers if you break the steam pipes.

Mr. FRY—It is of course well known to everyone who has ever been on the Reading Railroad that they have stoves that are outside the cars, and it would be very interesting if we could learn if they do heat the cars with those stoves. Those who travel over that railroad have been accustomed to complain that the heaters on very cold days were not sufficient to heat the cars.

Mr. PHILIPPI—We commenced last fall to double-sash our cars. On the Bound Brook route a few weeks ago, when the thermometer outside was down to zero, we ran our cars with the heat ranging from 75 to 80 degrees; and I learned from gentlemen who at the same time were on the return train from New York to Philadelphia on the New Jersey Central in cars that had the Baker heater that the thermometer was as low as 60 degrees.

Mr. SPEER—You do not pretend to ventilate at all with that heater?

Mr. PHILIPPI—A car will ventilate itself if you drive the air in.

Mr. DOW—I recently saw in Pittsburgh what is said to be the most simple and effective way yet devised of extinguishing a fire in case of accident. It was simply a tank containing anywhere from three to eight gallons of water set above the stove. The stove was something like the Speer stove. It had an inner and an outer casing packed with asbestos to keep it free from frost in case the car was side-tracked. In the center of this was a common plunger valve. The holes of this plunger valve radiated, but were bored at such an angle that they did not strike the sides of the stove. The inventor showed how it would operate in case of collision. By my stop watch the fire was put out in 30 seconds, and in 45 seconds I could take the coals, which were red-hot, out of the stove.

Mr. PHILIPPI—On several occasions when our cars have run off the track, we have lost the heaters and have had to go back some distance to find them. In the accident on the Pickering Valley Railroad a few years ago one of our trains went over an embankment. Every car had two heaters attached to it. The heaters were all torn off. Had there been stoves in those cars, I do not believe there would have been a life saved.

Mr. FRY—Is it now considered necessary to use double windows on the Reading road in order to enable those heaters to heat the cars, and with double windows is it possible to heat a car when the thermometer is 15 or 20 degrees below zero? Many prominent railroad men have been much taken with the Reading heaters; but on further inquiry they doubted whether those heaters would heat a car in very cold weather.

Mr. PHILIPPI—There is no trouble in heating cars with double sashes, even at 15 degrees below zero. One trouble in heating cars is the want of good brakemen who will be attentive to their duties.

Mr. CREAMER—is a heater underneath the car absolutely safe if the car should turn over? If it is once established that it is, then perhaps the ingenuity of American mechanics will contrive some way or other to make them generate all the heat that is required.

Mr. SPEER—Whenever a car is telescoped, the water to extinguish the fire is knocked right out. Accidents of rolling gently down a hill and cooling off do not so often occur.

Mr. FRY—Has a car ever been set on fire on the Reading road?

Mr. PHILIPPI—There was a car burnt up that had two heaters attached; but it was found that some malicious person or careless brakeman had put cotton waste back of the pipes, and the cotton waste took fire. But we have never

Fast Time.
NEW YORK, Feb. 23, 1883.

TO THE EDITOR OF THE RAILROAD GAZETTE:

I have noticed in several of the late numbers of your journal articles by correspondents on the high speeds attained on both American and English railroads, and I would be pleased to place before you copy of a memorandum I made on a trip on Sept. 9, 1881, from New York to Philadelphia on the Pennsylvania Railroad, which, while only on a short distance and on a heavy grade, will seem to be very lively running. The train left New York at 8 a. m., and it was just beyond Princeton when I took the time from mile-post to mile-post with another gentleman, and the miles were made in the following order in seconds: 61, 56, 53, 50, 53 = 273 seconds for 5 miles, or an average of 54 $\frac{1}{2}$ seconds to a mile, equal to about 66 miles per hour. It will be noticed that the highest velocity was reached on the fourth mile, when the speed was at the rate of 72 miles per hour which is certainly very fast traveling on the rails. M.

General Baggage Agents' Association.

The first semi-annual meeting for 1883 of the National Association of General Baggage Agents, was held at the Grand Central Hotel, New York, Feb. 21, 22, and 23. The following members were in attendance:

W. F. Allen, Hannibal & St. Joseph, Chicago, Burlington & Kansas City and Keokuk & St. Louis.
W. S. Andrews, Nashville, Chattanooga & St. Louis.
R. R. Bentley, Pennsylvania Company, Pittsburgh, Cin. & St. Louis and Vandalia Line.
C. N. Buck, Jeffersville, Madison & Indianapolis.
D. M. Calkins, Clev., Col., Cin. & I. and Indianapolis & St. Louis.
Joseph P. Cox, Cin., Hamilton & Dayton.
H. F. Dearing, Michigan Central and Chicago & West Michigan.
J. C. Donaldson, Central of New Jersey.
E. Darrich, Philadelphia & Reading.
John L. Freeman, Lake Shore & Michigan Southern.
A. A. Faunce, Fitchburg.
W. D. Garwood, St. Louis & San Francisco.
C. Lorraine, Chesapeake & Ohio.
F. J. McWade, Pennsylvania, Northern Central, Baltimore & Potomac, West Jersey and Philadelphia, Wilmington & Baltimore.
Geo. P. Maule, Missouri Pacific.
D. Melinster, Chicago, Milwaukee & St. Paul.
Geo. A. Morton, Boston & Albany.
J. D. Marston, Chicago, Rock Island & Pacific.
W. R. Meadowcroft, Chicago & Iowa.
Jas. J. Post, New York, Lake Erie & Western.
L. H. Plues, Flint & Pere Marquette.
N. A. Phillips, Chicago & North Western.
C. S. Pease, Delaware & Hudson Canal Co.
J. E. Quirk, Chicago & Grand Trunk.
J. Van Smith, Baltimore & Ohio.
Henry Starring, Grand Rapids & Indiana and Cin., Richmond & Fort Wayne.
M. B. Starring, Chicago, Burlington & Quincy, Kansas City, St. Joseph & Council Bluffs and St. Joseph & Des Moines.

had a car set on fire in running. As for collisions, we have none.

Mr. FORNEY—If that is the case, I think all roads had better be equipped with that heater.

Mr. DOW—I have not quite ascertained yet whether the Reading hang their stoves or heaters under the car.

Mr. FRY—Under the car.

Mr. PHILIPPI—The heater is not patented, is it?

Mr. PHILIPPI—The patent has run out. We use a great many Speer stoves, and they are as good a car-heater as you can get. I do not think his heater will set a car on fire unless it is telescoped.

The PRESIDENT—Is there not much difficulty in keeping the cars warm on local trains where there are many stops in very cold weather?

Mr. PHILIPPI—Not on local trains. It is with long through trains that we have trouble.

Mr. FORSYTH—We can hope for very little from these water extinguishers, for the reason that most of them are operated by valves, and at the very moment they are wanted, they are likely to be out of order. If we had a collision every day to operate them and keep them in order, they no doubt would be effective. But collisions happening so rarely, I think that the valves and cocks and those arrangements to turn on water would be very likely to be found out of order just at the time they were needed.

Mr. SMITH—When the Reading cars are standing in cold weather with a very hot fire, is there not danger of the cars taking fire.

Mr. PHILIPPI—No sir. We have had cars standing on the track, when the iron melted and the car did not take fire.

Mr. SMITH—My reason for asking was that in January I was in Oil City and I saw a parlor car of the Buffalo, Pittsburgh & Western Railroad which caught fire from the Reading heater. Everything was consumed excepting what was outside on the trucks.

Mr. PHILIPPI—It took fire for the reason, I suppose, that the car was not properly constructed.

The PRESIDENT—Will Mr. Philippi explain how he puts in the smoke flues to prevent fires?

Mr. PHILIPPI—We put the smoke flues up through the corner of the car. Some of them we have cased with plaster of paris, and the ones we are putting in now we are casting with a half-inch thickness of asbestos. We give an air space between the pipe and the outer sheathing.

The PRESIDENT—How many heaters do you use to each car?

Mr. PHILIPPI—Two.

LIGHTING CARS.

The PRESIDENT—The other subject for discussion this evening is the lighting of cars.

Mr. PHILIPPI—I had cars fitted out for gas at Altoona for the Pennsylvania Railroad in 1860; but an accident occurred there and some of the cars were burnt up and the company stopped using gas for lighting; but they have now adopted it again. In the first mode of using gas they put a cylinder inside the car with 300 lbs. pressure to the square inch. Afterward they adopted the mode used on the Reading road.

Mr. HOPKINS—I represent the Pintsch Lighting Company. In talking with railroad men I find that they regard our system as a new thing. That of course is not so. The inventor of the system introduced it in Europe in 1870. There are now about 10,800 cars and locomotives lighted with it, without counting the few we have on this side of the water. The system is in some respects similar to that described by Mr. Philippi, as being in use on the Reading road, but in some of its features it is very different, and in some we think quite superior. I showed the system recently to Mr. Wootton. I had a car from the Erie and he had one of his own cars there. He said that he was unfortunate in not having one lighted with his oil gas. But he was consuming 30 ft. of gas and I was consuming 9 ft., and he had to acknowledge that our light was about 50 per cent. better. We have a superior arrangement for controlling the gas. We have under the car a cylinder, or two cylinders, according to the work that is to be done. If we run from here to Buffalo and back we put on two cylinders. We compress the gas into the large cylinders at the works, and feed it into those cylinders along the railroad tracks at convenient places, as required, up to ten atmospheres. The gas passes from the cylinders through a regulator which is strapped under the car. Consequently the high-pressure gas does not have a chance to get into the car at all. The high pressure is entirely cut off from the inside of the car. The gas passes from the regulator into the saloon and up through the saloon, where it is controlled by a general cock which regulates the whole system. Immediately above the cock we have an outlet from which is taken the saloon lamp. The pipe then passes up to the roof and along the roof, and outlets are taken there for the lamps which hang from the roof. We sometimes put in three lamps and sometimes four. The West Shore Company will have five. We have cars very brilliantly lighted on the Erie road.

Mr. PHILIPPI—Have you not 28 burners in your cars running to Philadelphia?

Mr. HOPKINS—Yes. But those 28 burners are burning only 9 feet. The lamps in which we burn this gas are quite peculiar. Gas is now costing the Erie company about two dollars a thousand to compress. We think it should not cost so much. We are obliged to educate the men up to the handling of the works, and we have been unfortunate in having men taken away from us after we have educated them. We are now training the third set of men. Nevertheless, at two dollars a thousand for gas and burning 10 ft. an hour, it is a cheap enough light, if you want a very brilliant one. As to its safety we think there we can make special claims. We put the tanks under the car and we cut off the high-pressure system entirely from the inside of the car, and if there is any trouble it can only be a small leakage, such as you have from the low-pressure system. We could do with one foot of gas per hour, what the ordinary city gas will do with five feet.

Mr. PHILIPPI—Do you use oil gas?

Mr. HOPKINS—Yes.

CAR SEATS.

The PRESIDENT—The next subject is the design and construction of car seats.

A representative of Messrs. Gardner & Co. read a short paper describing their car seat, which was exhibited. The mechanism consists of an arrangement by which the seat is thrown forward and inclined backward in the act of reversing the seat. The mechanism can be used for rattan or slat, or veneer seats, and it was claimed that the arrangement was so simple as to make it superior to any other device thus far introduced.

Mr. MASON, of Alabama, exhibited and described his car seat, which also is so constructed that the act of reversing the back throws the seat upward and inclines it downward from the front toward the back.

The PRESIDENT—Mr. Forney has found a great deal of fault with car seats and with a great many other things besides, and I will call on him to give us his views on the present subject.

Mr. FORNEY—The competition for travel is getting greater

every year. The consequence is managers of railroads find the more comfortable they make their seats the more people they can attract to them. The result is that they are all inquiring now for a seat which will give the greatest amount of convenience and comfort. The two seats which are exhibited here this evening, which have an arrangement for inclining the seat, are certainly in move in the right direction. In the days when we traveled in stage coaches, the builders of those coaches gave the seat a considerable inclination backwards, the reason being that the jolting of the coaches over the rough roads had a tendency to slide a passenger off the seat. The same thing occurs, only to a less extent, on a railroad car, and therefore it is desirable that car seats should also be inclined. They must be arranged so that in the act of reversing the back it will change the inclination of the seat.

If any of you have traveled on the Sixth Avenue Elevated Railroad, you will find that recently rattan seats have been put in a large number of cars. They are made very convex and the result is that a passenger when he sits in them feels very uncomfortable. That portion of a man's body which comes in contact with a seat does not fit on a convex surface. But for some reason or other for a great many years past upholsterers have clung to the delusion that in order to make a seat comfortable, it is necessary to make it as convex as possible. Some time ago I was at the shops of the Elevated Railroad Company, and the Master Mechanic then said that the convex seats which have been described, were extremely comfortable, and were very much liked by passengers. But when I went into his office I found that he had an old-fashioned chair, and that the seat had been removed and had been replaced by leather, which had a beautiful concave surface into which he fitted as an acorn does into its cup. The inference is obvious; the seats may suit the public, but they do not suit the officers of the Elevated Railroad. In the Gardner wooden seat, you will notice that the makers of it have been shrewd enough to observe that if they make a hard seat convex, it will be extremely uncomfortable. They have, therefore, made it concave, and the result is that you can ride in it a long distance without discomfort. On the Sixth Avenue Elevated Railroad the old rattan seats, which were originally flat, have by use become concave, and are very comfortable.

There are some other considerations which have a bearing on the question of comfort of seats. If you examine the anatomy of a man you will find that his spinal column is an articulated system of bones, which, unless supported, is subject to lateral flexure. Consequently, in order to keep it vertical, it is necessary for him to exert a certain amount of tension on some of the muscles of the back. If that tension is not required, the muscles will relax and he will then have a sense of rest. It is therefore important that that portion of a passenger's back should be properly supported by the seat, so as to relax the muscles referred to. In the first-class railway carriages in England the backs of the seats are upholstered with a projection which supports a passenger about the loins. These seats are extremely comfortable. What has been said of the lower portion of the spinal column is also true of that part in the neck, and in keeping our heads erect, whether in a standing or sitting posture, a considerable amount of muscular exertion is necessary. If the head is supported in any suitable way, the muscles may be relaxed and we have a sense of relief. It is therefore important in a comfortable car seat that not only the back but the head and neck should have some support. On the lines between here and Boston some chairs have recently been placed in the drawing-room cars, which were made by Messrs. Pottier & Styms, of this city, in which they have recognized the necessity of supporting the backs of passengers, and have carried the back of the seat high enough to give a support to the head.

Mr. MASON—if car seats of the standard shown here were put into parlor cars and the parlor chairs were put into the other cars, at the same rate passengers would take the seats in preference to the chairs. None of the head-rests applied to car seats ever give satisfaction. They are expensive. You cannot keep one of them clean, and people soon complain of them.

Mr. FORNEY—I would ask Mr. Mason whether the Pennsylvania Railroad does not make the backs of its seats just as high as they can.

Mr. MASON—No, sir. They make them 28 in. wide, and they did make them 30, but cut them down two inches.

Mr. FORNEY—On the Pennsylvania Railroad the backs of the seats come so low down that you cannot get your feet under them.

Mr. MASON—I would make the seat, if I had my way, one inch higher. The seats were very much too high. They were reduced two inches some eighteen years ago, and when they built the Eastlake cars the seats were lowered an inch or two more.

Mr. CREAMER—The burden of the talk has been about rests for the head and body. Will not somebody say something about rests for the heels? The most uncomfortable thing in a railroad car, is to be cramped in where you cannot thrust your legs out, but have to keep them straight. I sat full of passengers, and the gentleman who occupied the same seat with me and myself never rode with so much discomfort before in our lives. If that plan is used, the seats ought to be further apart. What the human body requires is change. Nothing is more uncomfortable than to be confined and cramped so that you cannot change your position.

Mr. DOW—Many of the Western trunk lines have learned the need of giving ample room between the seats, and they are adopting reclining chairs in their through trains. The Alton road must have twelve or fifteen such cars. When we bought the right to make the Startley chair, I thought to make a pretty chair and I conveled the seat. The manager came to me one day and said: "I wish you would go over the road and look at those seats." I went as far as Bloomington. When I came back he asked me how I felt. I told him I felt as though I had been riding on a billiard ball. I changed them at once to concave seats. The Pottier & Styms chair is probably the easiest riding chair made.

Mr. FORNEY—I agree with Mr. Mason with reference to the relative comfort of double car seats and chairs, and say unhesitatingly that the drawing-room car chair is a delusion. If you could substitute for chairs a really comfortable double seat in the same place and sell it for the same price that is now charged for a chair, the seats would be infinitely preferable. On the drawing-room cars between here and Boston there are two rows of chairs on each side. Just as many double seats could be placed in the cars as there are now chairs. Now, if the same price were charged for a double seat that is now charged for a chair, to me and to nearly all my friends the double seats would be infinitely preferable to the chairs, and I believe that if the experiment were tried and comfortable double seats were sold for the same price that is now charged for chairs, it would run all the chair cars off the roads.

Mr. MASON—Nearly all ladies complain of the high seats in cars.

Mr. FORNEY—Mr. Mason is right. Ladies do not like a seat more than about 17½ in. high.

The meeting then adjourned.

RAILROAD LAW.

Georgia Railroad Commission.

A dispatch from Atlanta, Ga., Feb. 28, says: "The Supreme Court to-day rendered a decision in the case of the Georgia Railroad against the Railroad Commission—a suit of deep interest to the citizens of Georgia. The decision sustains the Commission. The history of the case briefly summed up is as follows: Last spring a bill was filed by the Georgia Railroad & Banking Co. and William M. Wadley, as lessee, praying the Chancellor to enjoin the Railroad Commissioners from enforcing certain rates of freight as against the Georgia Railroad, upon the ground in chief that the charter of the Georgia Railroad Co. authorized it to charge certain other rates, and that it had a constitutional right to do so; that the legislature could not interfere to take those rights away. Its charter provided that it might charge not exceeding 50 cents per 100 pounds per 100 miles on freight, and 5 cents per mile passenger tariff. The Commissioners' rates were, of course, lower. The matter was heard by Judge Simmons, in Macon, and after a legal fight of two or three days resulted in a refusal of the application for an injunction. The case was brought to the Supreme Court by counsel for the road, and the Court rendered its decision affirming the judgment of the court below. The decision was practically unanimous, Judge Hall stating that while he differed with his associates in the matter of the reasoning, he did not differ with them so far as the law in the case was concerned."

THE SCRAP HEAP.

Locomotive Building.

The Grant Locomotive Works in Paterson, N. J., have declared a dividend of 12 per cent., payable March 10 to the persons entitled thereto, under the terms and conditions of the agreement of creditors made May 1, 1875. This is the first dividend paid under that agreement.

The Baldwin Locomotive Works in Philadelphia have taken a new order for 15 passenger and 10 freight engines for the Philadelphia & Reading road, to be delivered in the spring.

The Northern Railroad shops in Concord, N. H., have just completed a Mogul freight engine with 18 by 26 in. cylinders and a 14½-ft. drivers. It weighs about 40 tons.

Car Notes.

The Barney & Smith Manufacturing Co. in Dayton, O., are building a number of stock cars for the Chicago & Atlantic road.

The Muskegon Car & Engine Co. in Muskegon, Mich., has just taken an order for 300 freight cars for the Kansas City, Fort Scott & Gulf road.

The Marshall Car & Foundry Co. in Marshall, Tex., is building a number of the freight cars for the Texas & Pacific road. The company purposed building a large blast furnace.

The Dutro Car Wheel Co. in St. Louis, has removed its works to the new shops, and thereby secures better buildings and increased capacity for production.

The Pittsburgh, Fort Wayne & Chicago shops in Fort Wayne, Ind., are building 350 gondola cars. Part of them will be built to carry 30 tons.

Bridge Notes.

The Central Bridge Co. in Buffalo, N. Y., has contracts for several bridges on the New York, West Shore & Buffalo road.

Messrs. Alden & Lassig of the Leighton Bridge & Iron Works in Rochester, N. Y., have completed their contracts for the New York, West Shore & Buffalo road, which included over 1,800 tons of wrought-iron bridge work.

Iron Notes.

The Pennsylvania Steel Co. is running its works at Steelton, Pa., full double time. The frog and switch shop is full and the rail mill is running on orders for 70,000 tons of steel rails.

The blast furnace at Elk Rapids, Mich., has shut down on account of a short supply of charcoal.

The Colorado Coal & Iron Co. at Pueblo, Col., turned out in January 2,201 tons of pig iron, 5,143 tons of steel, 4,746 kegs of nails and 1,016 kegs of spikes. The steel works are in operation 21 days only.

The Laclede Rolling Mill in St. Louis has shut down for the present, on account of the dullness of trade and difficulty in relation to wages.

The Wampum Iron Co., owning a blast furnace in New Castle, Pa., has failed, the liabilities being about \$40,000. The property has been levied on by the sheriff.

Manufacturing Notes.

The Union Switch and Signal Co. of Pittsburgh, will issue bonds to the amount of \$350,000, to pay off its floating debt. During the past year the company's business aggregated \$375,000, and it has unfilled orders amounting to \$175,000, in addition to which \$200,000 worth of work has been estimated for and the company expects to be awarded the contracts. A new shop, 120 by 140 ft., is being finished. The improvements in building and equipping the shops in the past year have cost \$40,000.

The Rail Market.

Steel Rails.—No large sales are reported, and quotations for small lots continue at \$40 per ton at mill. Large orders can doubtless be placed at \$39, but none are on the market just now.

Rail Fastenings.—Quotations are unchanged, with a steady but not active market.

Old Rails.—Some small sales of old iron rails are reported at \$25.50 to \$26 per ton in Philadelphia for tees and \$27.50 for double heads. Large sales could not be made at these prices. Old steel rails are nominal at \$21 to \$22 per ton; crop ends have sold at \$21.50 in Philadelphia.

Sale of Car Works.

The Bellefonte Car Works at Bellefonte, Pa., are offered for sale at \$40,000, which is much below their cost. The works are large and are well placed for building and selling freight and coal cars.

British Rail Exports.

For the month of January the exports of steel and iron rails from Great Britain to the United States and to all countries for four successive years has been, in tons of 2,240 lbs.:

	1880.	1881.	1882.	1883.
Iron rails	7,941	5,663	8,763	131
Steel rails	7,350	1,705	18,500	5,962
Total	15,291	7,368	27,267	6,093
To all countries:				
Iron rails	11,143	7,084	11,105	3,245
Steel rails	28,916	23,240	56,798	68,276
Total	40,059	30,324	67,901	71,521
The total rail exports to the United States were smaller than in any previous month since August, 1870, except last November.				
For the first half of the year 1883 the exports to this				

country averaged 20,467 tons per month. For the seven months since there have been:

July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.
18,246	13,179	6,765	23,642	4,636	6,742	6,093

Notwithstanding the decrease in exports to the United States, the total British rail exports were larger last January than in any previous year since 1873 at least. The countries showing great increases are Canada (\$90 per cent.), India, Italy and the enumerated "other countries," which last January took 32½ per cent. of the total British exports.

A Plucky Express Messenger.

At 3.40 Tuesday morning a daring attempt was made to rob the safe of the Erie & New England Express Co. on the midnight Albany & Susquehanna train, when between Afton and Bainbridge, and but for the plucky manner that William G. Smith, of Union, the express messenger, defended his trust from the daring thief, a tragedy might have been enacted and the company he represented been between \$40,000 and \$50,000 out. The affair is described as follows: The train, known as the midnight express, left Binghamton at 11 o'clock Monday night on its way to this city. After leaving Afton, about 3.40 a. m. yesterday, Smith, the messenger, sat down at his desk to check up his money account. On concluding his labors he glanced up and was startled at seeing a stranger emerge from a closet in the car, grasping a revolver in his hand. As the man stepped from his place of concealment he approached Smith and said in a loud and commanding tone of voice: "You needn't close that safe; we'll divide. Don't shut the safe." Smith grasped hold of the top of the safe and with his right hand bent down, reached with his left hand into the safe for his revolver. He secured the weapon, closed the safe, and was turning with the pistol in his left hand, when the stranger discharged one chamber of his revolver, striking Smith in the left arm and fracturing a bone. At the same instant Smith's pistol fell out of his hand and dropped behind the safe.

While Smith was scrambling to recover possession of his pistol, the man fired at him four times, striking him once in the side of the body, near the hip. All this, of course, took but a few moments. By this time Smith recovered possession of his weapon and turned to use it, when the robber dropped his revolver, fled out on the platform, and pulled the bell-cord and as soon as the train slackened up a little, jumped off the train and effectually made his escape, but without having obtained any booty. There was a large amount of money in the safe, the company carrying a greater amount than on any single trip during the last three months. Smith says that the robber was masked. He also thinks that he had secreted himself in the closet of his car while he (the messenger) was making the transfer of valuables from train No. 12 of the Erie Railway Co. to his car at Binghamton. When the train reached Oneonta, it stopped long enough for Smith to get his wounds dressed. He afterward came on to this city with the safe, but, after delivering it to the agent, was forced to succumb to weakness from the loss of blood and the shock of the attack. Another messenger was provided to accompany the express car to Boston. When the robber fled, he dropped his revolver, and it is now in Smith's possession.—*Albany (N. Y.) Express, Feb. 21.*

A Provident Englishman.

An affable though somewhat dexterous American was on his way the other day to the city of Boston. He had, with the thrifty fore-thought of his nation, secured a lower berth, and was meditating upon the wisdom of gathering his body behind the curtains when he was accosted by an Englishman in a tweed suit. The Englishman was of an ample presence and had the air of one who had been pampered on mutton chops all his life.

"You will excuse me," said he of the tweed suit, "but am I right in supposing that you have the lower berth?"

"You bet your life," replied the other.

"My sister," said the owner of the tweed suit, "has the upper berth, which is deuced awkward, you know. The fact is," added the Englishman, with frank urbanity, "it's unpleasant for ladies to climb up past a man in a lower berth. Now, might I ask you, sir, to do me the extreme favor of occupying the upper berth and permitting my sister to take yours?"

The request was scarcely preferred when the American, with the gallantry of a genuine Yank, hastened to assure his English acquaintance that nothing could give him more pleasure than to be of service to the lady.

On the following morning the American was astonished to see a pair of tweed legs emerge from a lower berth opposite that which he had politely given up, and the next moment the adipose upper extremities of the Englishman.

"Say," said the American, as an air of grave disgust began to creep over his astonished physiognomy, "didn't you ask me to give up my lower berth to your sister?"

"Certainly, my dear fellow," replied the gentleman addressed, "hope you slept well?"

"And you had a lower berth?"

"Of course."

"And then you got me to give up mine to your sister, sir?"

"Why, my dear fellow," said the Englishmen in his turn, "you didn't expect I'd give up a lower berth to my own sister, did you?"—*Toronto (Ont.) News.*

New York Railroad Commission—Reports of Accidents.

The New York Railroad Commission, through Acting Secretary Rogers, one of its number, has sent the following circular to officers of the various railroad companies:

"The Board of Railroad Commissioners of the State of New York respectfully call your attention to chapter 553 of the laws of 1883, a copy of which is inclosed. The Board suggests that you instruct your officers, agents and employees as to their duties under the provisions of said act. It is deemed advisable that when informing the Board of accidents, as required by section 4 of said act, the inclosed form of report should be used by general superintendents or managers. In case of loss of life, you will please report by telegraph at once to this office. The report inclosed is to be sent by mail as soon as possible in all cases of accidents resulting in loss of life or injury to person or persons. Please send a report of all accidents of the above nature that have occurred since Feb. 1, 1883. It is hoped that the railroads will co-operate with the Board in carrying out the objects contemplated by the act, thereby promoting the best interest of the railroads and of the public."

Snow Stories.

The person who inserted the following stories in an exchange is worthy to take rank with Eli Perkins:

"Deep snow and hard ice are making trouble on the Vermont railroads. There is an occasional amusing incident connected with the blockade. The other night a freight train broke apart on a curve. The first section had run quite a distance before the accident was discovered. Then it backed up, coupled on the missing section, and went on to its destination. But on looking over his way the conductor found that one car was missing from the centre of the train, and its disappearance was a mystery. Going back he found it down a bank. A still more singular accident occurred to a passenger train. It had halted as usual

at a little station during the night, but no engine was to be found in the morning. The tender was there all right, and as it proved, had piloted the train for a long distance on a down grade, the engine having jumped the track without derailing the rest of the train or checking its speed. Neither the engineer nor the fireman was injured."

More Zeal than Discretion.

The kind-hearted man who distributes single sheets of the Bible through the cars of the New York, New Haven & Hartford Railroad has moved up to this end of the Hartford Division, and is now operating between Meriden and Springfield. His work is quite generally understood. He goes from car to car and from passenger to passenger, and offers to everybody a leaf from the Scriptures. In the smoking car he interrupts games of cards by dropping the sacred pages on the card-table. Sleeping passengers he wakes up to give them their share of his leaves. People who are reading have to stop it while he hands out the mutilated Bible. No doubt he means well, but he is an unmitigated nuisance, and, more than that, he brings the Scriptures into contempt, as it were. The leaves are thrown on the car floors; profane passengers curse him and his whole work and the result of his labors is certainly not worth recording. The man, with all his good intentions, is a nuisance; and the officers of the road, who know well how he operates and who sell him especially cheap tickets so that they can afford to ride, cannot escape responsibility for this annoyance. Complaints are frequent. It is a matter of surprise to many regular travelers on the road that Superintendent Davidson and President Watrous and others, whose attention has been called to the matter, do not among them direct that this gentleman, if he rides on the trains, shall let the other passengers alone.—*Hartford (Conn.) Courant.*

He Had Done Quit.

A fresh country man came to Atlanta a short time since to get a situation on some of the many railroads centering here. He gained admittance soon after his arrival, and commenced the following conversation with a railroad official:

"I want to get some work on the railroad."

"What can you do?" said the railroad man.

"Oh, most anything."

"Can you run a locomotive?"

"A loco what?" inquisitively asked the countryman.

"An engine, I mean."

"Well, I can't say I can, but I have rid on 'em, and I could mighty soon know how."

"We have no time to learn you. Probably you can lay track. Have you ever tried that?"

"I can't say that I can."

The railroad man studied awhile, and remarked, "I don't think you know much about railroad business, but if you want a place just for the name of it, I'll give you a place as car-coupler. You can report to Mr. — and he will tell you what to do. It will pay you \$10 per week when you learn to do the work."

The countryman was delighted; the wages were as large as he expected, and he hurried off to hunt the man he was to report to.

About three days after this conversation the countryman came back to the railroad official. His right hand was in a sling, his left hand was black and blue and ought to have been wrapped up. He was dragging his left leg behind him as he walked, and a piece of his left ear was gone, and the left side of his face was a solid scratch. Altogether he looked as if he had been through a threshing machine. He inquired mournfully if he could get a pass ticket to Lincoln-ton.

"You are not going to quit?" said the railroad man.

"No, I ain't gwine to quit, 'cause I've done quit. I want to go home. This business don't suit me. If I stay here a week I won't be able to git home. I'm a gwine!"—*Atlanta (Ga.) Constitution.*

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New London Northern.

This company owns a line from New London, Conn., to Brattleboro, Vt., 121 miles. It also owns the Brattleboro & Whitehall, a narrow-gauge branch from Brattleboro to South Londonderry, 36 miles. The whole property is leased to the Vermont Central trustees, and the report for the year ending Nov. 30 relates only to the financial affairs of the company.

The balance sheet is as follows:

Stock.	\$1,500,000.00
Bonds.	1,499,500.00
Bills payable.	217,000.00
Coupons and dividends unpaid.	3,175.00
Profit and loss.	24,855.97
Total.	\$3,466,531.06
Road and additions.	\$3,154,967.28
Brattleboro & Whitehall road.	197,581.58
Lessees.	74,342.66
Central Vermont Co.	18,286.37
Cash.	21,353.17
	\$3,466,531.06
Bills payable decreased \$6,000. The bonds consist of \$300,000 first-mortgage 6 per cent. bonds; \$287,500 second-mortgage 7 per cent. bonds, and \$812,000 consolidated 5 per cent. bonds. The interest charge is \$85,725 yearly.	
The income account was as follows:	
1882.	1881.
Cash on hand, Dec. 1, 1881.	\$30,085
Rent of road and other rents.	218,856
Interest.	38,209
Bills payable.	111,000
Sundry accounts.	2,170
Total.	\$267,967
	\$338,817
Cash, Dec. 1, 1882.	\$21,353
	\$30,085

The account was swelled in 1881 by the payments for the

Brattleboro & Whitehall road and the money borrowed for that purpose.

Quarterly dividends were paid, amounting in all to 6 per cent. on the stock.

Chesapeake & Ohio.

This company makes the following statement for the year ending Dec. 31, in advance of the publication of the full reports.

The earnings for the year were as follows:

1882.	1881.	Inc. or Dec. P. c.
Freight.	\$2,600,539	\$2,106,592 L. \$403,947 23.4
Passengers.	624,508	504,205 L. 120,393 23.9
Mail, etc.	109,840	94,547 L. 15,293 16.1
Total.	\$3,334,977	\$2,705,344 L. \$629,633 23.3
Expenses.	2,302,449	2,267,404 L. 35,045 1.6
Net earnings.	\$1,032,528	\$437,940 L. \$594,588 135.8
P. cent. of expenses.	68.0	83.8 D. 14.8

The fixed interest charges last year were \$881,000, leaving a surplus of \$201,528.

The extension to Newport News and the western connections were not fully completed and opened for business last year until July.

Lehigh Coal & Navigation Co.

This company owns a great coal property in the Lehigh and Wyoming anthracite regions; it owns the Lehigh Canal from Mauch Chunk, Pa., to Easton, and leases the Delaware Division Canal from Easton to Bristol. It also owns the Lehigh & Susquehanna road from Easton to Wilkesbarre, 105 miles, with 50 miles of short branches, and leases the Lehigh & Lackawanna, 25 miles; the Nesquehoning Valley road, 17.5, and the Tresckow road, 6.5 miles. These railroads, 204 miles in all, are leased to the Central Railroad Company, of New Jersey.

By the report of the board of managers for the year ending Dec. 31, 1882, the coal tonnage of the Lehigh Canal and the railroads is shown to have been as follows:

1882.	1881.	Inc. or Dec. P. c.
Delivered east of Mauch Chunk by rail.	2,934,213	3,961,754 D. 27,541 0.6
Delivered east of Mauch Chunk by canal.	369,003	396,109 D. 27,106 6.8
Consumed along the line above Mauch Chunk.	128,805	120,799 L. 8,006 6.6
Delivered to connecting lines above Mauch Chunk.	233,801	225,803 L. 7,908 3.4
Delivered to Lehigh Valley R. R. at Packerton.	29	227 D. 198
	4,665,851	4,704,692 D. 38,841

The coal thus delivered or consumed in 1882 came from the following sources: Wyoming Region, 2,344,650; Upper Lehigh Region, Nescoped Branch, 512,531; Hazleton Region, 44,937; Black Creek Region, Drifton Branch, 369,465; Beaver Meadow Region, via Nesquehoning Valley, 526,830; Beaver Meadow Region, via Lehigh Valley, 4,145; Mahanoy Region, 9,481; Mauch Chunk Region, 833,126; Schuylkill Region, 20,650.

The revenue account for the year was as follows:

1882.	1881.
Railroads and Nesquehoning Tunnel. 1,445,190.02	1,429,468.33
Lehigh Canal, including water power.	76,764.28 74,777.54
Del. Div. Canal.	47,585.81 74,044.81
Net profit on Lehigh coal.	325,666.27 240,742.76
Royalty, rents, etc.	44,005.23 56,558.64
Total.	1,939,211.61 1,875,592.08
General and coal expenses.	62,892.40 59,101.24
Rents and taxes Nesq. Vy. R. R.	97,050.00 97,050.00
Rents and taxes Del. Div. Canal.	102,356.03 120,330.04
Taxes.	74,647.50 70,147.82
Interest account.	942,973.09 915,039.51

quality. On this investment we have received a dividend of 6 per cent. out of the profits of the year's business, and nearly as much more was placed by the slate Company in its dividend fund. A branch of our Wind Gap & Delaware Railroad has been built to reach the quarries and the thriving town of Bangor, and we have been operating it for about a month. The tonnage from the slate quarries thus secured will add materially to our railroad earnings, as it will pass over our lines an average distance of about 50 miles.

The Spring Brook Railroad Company, owning about nine miles of railroad which develops a large timber district near Scranton, being unable to pay the principal or interest of a loan made by this company in 1874, for the purpose of aiding them to extend their railroad, have leased their property to us. By this agreement we can apply the net earnings of their road to the payment of their indebtedness, and by having possession of this feeder we can throw a large amount of business on our main lines of railroad."

The company purchased, during the year, 884 acres of coal territory situated about five miles west of Tamaqua, for which they paid \$222,089.60, about the amount which the sinking fund receives in three and a half years from the charge of 10 cents per ton of coal mined. By the operation of this charge the valuation of the company's coal land, which stood on the books Jan. 1, 1873, at \$5,874,196.27, being at the rate of \$816 per acre, for 7,201 acres, was reduced so that, including the Kent and McLean purchase in 1874 of 175 acres, and the Kentucky Bank lands, and deducting 207 acres as worked out, which is a full allowance for the lands exhausted by mining in the last ten years, the company had Jan. 1, 1883, 8,053 acres of equally valuable land charged at \$5,816,058.22, or \$722 per acre.

The report continues: "In order to secure for the Lehigh & Susquehanna Railroad the coal tonnage from the Lehigh Luzerne Coal Company's lands, which was about to pass under the control of another railroad company, a loan of \$75,000 was made, secured by the transfer of 11,000 shares of stock, being 50 per cent. of the total issue. The loan is for three years, but the tonnage from these lands is perpetually held by contract to pass to market over our lines of railroad. The Lehigh Luzerne lands lie in the western part of the Wyoming coal field; comprise 2,500 acres, and they were the last large body of coal lands in that region whose tonnage was not controlled in the interest of one of the carrying companies. They are now producing about 100,000 tons per annum, and after this year should ship from 200,000 to 300,000 tons each year, on which our transportation earnings will be about 30 cents per ton.

"During the past year the extended debenture of loan of \$106,190.76, the convertible debenture loan of \$41,550, and the Greenwood first-mortgage loan of \$140,000, amounting in all to \$287,740.76, were paid at maturity. These payments and the purchases and loans above recited necessitated some increase of the floating debt, which, after deducting cash assets, now amounts to about \$1,000,000, against which this company holds \$740,000 of its consolidated 7 per cent. bonds, \$308,000 Delaware Division Canal Company's bonds, and 18,901 shares of its own stock.

"We have reason to look for a steady increase of business and of net earnings from the region now tributary to our roads, and this should enable us to fund our floating debt and refund such part of the loans maturing this year and next as we may desire by the sale of stock or the issue of bonds at a lower rate of interest."

The questions between the state and this company in regard to the four-mill tax are stated to be still unsettled.

Philadelphia, Wilmington & Baltimore.

For the year ending Oct. 31, 1882, which is covered by the forty-fifth annual report, this company worked the following lines:

	Miles.
Maryland Division, Philadelphia to Baltimore	94.99
Southwark Branch in Philadelphia	1.37
Brandywine Branch, Wilmington	2.16
Newark & Delaware City Branch	11.79
Vincentville and Port Deposit Branch	3.78
Wilmington to Delaware Junction	12.16
Total P. W. & B. proper	126.25
Central Div., Phila. & Balt. Central R. R.: West Philadelphia to Octorara Junction	62.59
Junction to West Chester	9.40
Chester Creek Branch	7.14
Delaware R. R., Delaware Junction to Delmar	83.83
Townsend Branch	9.15
Clayton Branch	1.27
Seaford Branch	5.72
Total	385.81

The Port Deposit Branch was leased to the Columbia & Port Deposit Co. from May 1, 1882, reducing the mileage at the close of the year to 382.03 miles.

The Philadelphia & Baltimore road is owned through ownership of the entire stock; it includes the former West Chester & Philadelphia road. The Delaware road is leased (this company also owning a majority of the stock) for 30 per cent. of the gross earnings. The Queen Anne & Kent road is controlled and operated, this company owning a majority of the stock. The Dorchester & Delaware road was acquired last year, this company guaranteeing 4 per cent. interest, from Feb. 1, 1883, on \$400,000 bonds, and receiving in return all the stock and also \$50,000 bonds to pay for improvements of the road.

The report is changed in form from those of former years, the statements now including the operations of the whole mileage worked.

The general account was as follows:

Stock	\$11,795,050.00
Bonds	3,726,416.66
Current accounts and balances	616,810.00
Profit and loss	1,465,585.49
Total	\$17,603,862.15
Road and property	\$14,183,116.66
Stocks and bonds owned	2,071,872.27
Sinking funds	152,000.00
Fuel and materials	314,621.42
Accounts and balances	276,157.35
Cash	596,096.45
Total	\$17,603,862.15

There was no change in stock or bonds during the year. The bonded debt consists of \$31,500 convertible bonds of 1884; \$1,000,000 registered 6 per cent. bonds, due 1887; \$700,000 registered 6 per cent. bonds due 1892; \$800,000 registered 6 per cent. bonds due 1900; \$1,000,000 registered 5 per cent. bonds, due 1910; \$60,000 ten-year notes, due 1887, and \$134,916.66 mortgages and ground rents. There were \$350,000 bills payable paid off last year.

The stocks and bonds owned, whose cost is charged above, have a par value of \$4,032.975.

During the year 4,544,053 passengers were carried, the average distance traveled being 24.48 miles. The number of tons of freight moved was 1,703,215.

LOCOMOTIVE RETURNS, OCTOBER, 1882.

Master Mechanics of all American railroads are invited to send us their monthly returns for this table.

NAME OF ROAD.	Locomotives in service... Miles operated...	MILEAGE. Total	MILES RUN TO Ton of coal...	AVERAGE TRAIN. Cord of wood...	LBS. COAL BURN'D PER Pint of oil...	COST IN CENTS PER Passenger car mile...	COST PER MILE IN CENTS FOR Repairs...	Average cost of coal per ton...
Allegheny Valley:								
River Div.	139	39	100,440	2,574	29.21	18.95	3.90	14.19
Low Grade Div.	120	23	50,595	2,921	32.40	19.05	2.70	2,026
Buffalo, Pitts. & Western	223	23	77,585	3,103	56.08	20.51	2.13	3,429
Central Pacific:								
Western Div.	900	29	79,723	2,749	52.41	14.36	—	9.57
Northern & San Pablo Div.	134	37	96,346	2,577	33.20	15.59	4.18	18.20
California Pacific	179	17	47,581	2,706	30.04	23.54	2.08	17.6
Sacramento Div.	119	41	108,603	2,049	25.30	20.55	4.02	18.57
Truckee Div.	205	29	77,978	2,088	28.36	19.10	1.77	22.29
Humboldt Div.	200	29	62,142	2,825	35.55	19.94	6.84	18.74
Salt Lake Div.	219	29	91,954	3,170	30.21	16.35	4.94	22.48
Oregon	151	10	39,322	2,983	35.01	10.99	4.84	17.26
Stockton & Copperopolis	49	3	29,256	1,708	33.35	20.98	1.54	10.85
Central Pacific, South Line:								
Visalia Div.	157	19	46,971	2,472	33.37	18.60	7.18	22.70
Tulare Div.	170	22	56,075	2,540	30.08	17.29	5.49	23.20
Los Angeles, San Diego & Wilmer Div.	167	31	57,125	2,810	40.01	14.61	2.45	22.04
Yuma Div.	249	25	51,542	3,020	38.24	14.01	3.75	22.94
Gila River Div.	241	24	73,333	3,056	52.34	19.12	4.16	18.88
Tucson Div.	219	29	67,982	2,344	35.06	13.16	2.06	25.21
El Paso & Rio Grande Div.	446	40	96,607	2,115	51.60	16.33	2.06	17.07
Chicago & Eastern Illinois:								
Main Line	172	50	119,634	2,083	27.30	15.10	4.85	16.12
Terre Haute Div.	53	50	30,568	2,083	27.48	13.50	5.04	5.01
Des Moines & Western:							3.59	5.57
Bloomington Div.	80	28	88,554	2,084	—	28.63	4.04	8.80
Grand Rapids & Ind.:								
Main Line	332	55	152,151	2,796	33.15	34.13	4.02	11.47
Cin. Rich. & Ft. Wayne	92	23	71,219	1,401	31.91	18.65	4,730	13.23
G. R. Ind. & Mackinaw	34	9	5,063	1,664	38.36	16.87	1,881	6.312
Bay View, Little Trav. & Mack	8	1	1,296	1,206	34.80	9.08	2,065	5.05
Traverse City Div.	36	3	2,834	1,945	34.66	10.99	3,874	5.561
Allegan & Southeastern	12	1	1,000	1,303	32.00	11.00	4.117	1.10
Illinois Central:								
Chicago Div.	305	110	302,120	2,747	32.61	15.01	3.90	5.49
Middle Div.	101	22	23,574	1,072	35.77	10.91	5.68	14.71
North Div.	345	54	145,235	2,082	31.10	12.99	4.12	14.58
Springfield Div.	113	16	39,275	2,018	32.50	17.92	5.58	2.05
Decatur Div.	401	46	143,147	3,040	27.04	15.01	6.83	12.51
Jeff. Madison & Indiana	247	41	123,239	2,096	34.98	12.00	6.02	12.50
Kingston, City, St. Jo. & Conn. Bi.	247	41	132,239	3,225	41.10	21.80	3.90	10.40
Lake Shore & Mich. Southern:								
Buffalo Div.	87	20	202,703	2,330	37.18	16.90	—	3.71
Erie Div.	128	321,344	2,510	34.33	—	29.26	4.37	6.75
Toledo Div.	93	231,446	2,581	29.53	—	22.8	4.19	9.27
Mich. & Northern Div.	239	50,481	2,498	35.52	11.54	8.82	2.05	9.23
Little River, Mich. Ry. & Texas	172	14	27,259	1,947	30.00	9.00	4.36	8.85
Louisville & Nashville:								
First Div.	435	59	151,100	2,61	32.90	12.64	4.06	5.36
Second Div.	200	26	73,886	2,842	33.16	17.68	4.91	2.90
Memphis Div.	130	15	47,471	3,163	31.78	13.20	5.75	2.60
Nash. & North Ala. Div.	122	20	66,047	2,563	33.40	13.75	4.34	18.15
Mobile & Montgomery	180	20	112,200	2,825	34.00	12.85	5.20	12.51
St. Louis Div.	207	32	74,595	2,331	39.22	14.56	5.28	12.49
Evans, Ben. & Nash. Div.	135	42	100,965	2,400	29.84	12.64	4.32	12.33
New Orleans Div.	141	30	76,116	2,527	44.45	15.80	4.63	21.79
Pensacola & Selma Div.	134	19	16,404	833	58.97	17.64	5.95	1.70
Louisv. Clin. & Lexington	223	41	125,730	3,018	41.51	15.21	4.73	12.85
Monacaough & Ont.	97	32	60,421	2,160	40.08	13.50	4.63	10.40
New York, Penna. & Ohio:								
Eastern Div.	225	83	255,623	3,105	30.40	14.50	4.70	3.18
Western Div.	197	64	203,883	3,189	24.07	13.91	6.78	3.32
Mahoning Div.	141	55						



Published Every Friday.

CONDUCTED BY

S. WRIGHT DUNNING AND M. N. FORNEY.

EDITORIAL ANNOUNCEMENTS.

Passes.—All persons connected with this paper are forbidden to ask for passes under any circumstances, and we will be thankful to have any act of the kind reported to this office.

Addresser.—Business letters should be addressed and drafts made payable to THE RAILROAD GAZETTE. Communications for the attention of the Editors should be addressed to the EDITOR RAILROAD GAZETTE.

Contributions.—Subscribers and others will materially assist us in making our news accurate and complete if they will send us early information of events which take place under their observation, such as changes in railroad officers, organizations and changes of companies, the letting progress and completion of contracts for new works or important improvements of old ones, experiments in the construction of roads and machinery and in their management, particulars as to the business of railroads, and suggestions as to its improvement. Discussions of subject pertaining to ALL DEPARTMENTS of railroad business by men practically acquainted with them are especially desired. Officers will oblige us by forwarding early copies of notices of meetings, elections, appointments, and especially annual reports, some notice of all of which will be published.

Advertisements.—We wish it distinctly understood that we will entertain no proposition to publish anything in this journal for pay, EXCEPT IN THE ADVERTISING COLUMN. We give in our editorial columns OUR OWN opinions, and those only, and in our news columns present only such matter as we consider interesting and important to our readers. Those who wish to recommend their inventions, machinery, supplies, financial schemes, etc., to our readers can do so fully in our advertising columns, but it is useless to ask us to recommend them editorially, either for money or in consideration of advertising patronage.

THE DEVELOPMENT OF A NEW TRAFFIC CENTRE.

The rapid settlement of Northwestern Minnesota, Northern Dakota and Manitoba—parts of the country in which agricultural settlement recently has been much more rapid than any where else in America—tends to develop new traffic centres. So long as there was little population north of the latitude of St. Paul and west of Minnesota, or, further south, west of the Missouri, Chicago, St. Louis and Milwaukee served for the whole Northwest so well that no very important trading point could be developed west of them. There were small places where some wholesale business in merchandise was done on the Mississippi and on the Missouri, and elsewhere, but none that promised to become really great cities. When the development of the country west of the Missouri first began, by the rapid settlement of Kansas and Nebraska, then there was a prospect of a new traffic centre really important as a market for produce as well as the distribution of merchandise. Then almost every point on the Missouri touched by a railroad claimed to be the embryo of the future great city which should be to the country west of the Missouri what Chicago had been to the whole Northwest. The railroads having been largely built before the country was settled, they did not unite upon any one centre, and for some time it seemed doubtful where the new traffic centre would be, or whether there would be one—whether the traffic would not be distributed among several Missouri River towns between Omaha and Kansas City. Kansas was settled earlier than Nebraska, and it finally became evident that there would be two new leading traffic centres on the Missouri—one due west of Chicago, and one west of St. Louis and southwest of Chicago—each about 500 miles from Chicago. Kansas City became the southwestern and Omaha (with Council Bluffs) the western city; their positions now seem fixed. The other Missouri River points—St. Joseph, Atchison and Leavenworth—live and thrive, but Kansas City surpasses the most prosperous of them and tends more and more to become the commercial centre of the country west and southwest; all the railroads that reach the Missouri south of Iowa have had to connect with Kansas City, whatever their original terminus and intention. It has become a great cattle market and a considerable grain market; packs more cattle than any other place in the country and more hogs than any other west of Chicago and St. Louis. One is reminded of the rivalry of the Lake Michigan towns in their early days. Milwaukee, Racine, "Littlefort" (now Waukegan), Michigan City and even New Buffalo, all contended with Chicago for pre-eminence as the leading port for the country west and southwest of Lake Michigan, and the southernmost practicable port succeeded.

Omaha and Council Bluffs, which form a sort of twin town, with the bitter hatred of each other common in such cases, developed a little later, with Nebraska and the country further west. They have never had any serious rivalry in this field. The population of the two together increased from 26,108 in 1870 to 48,577 in 1880—Council Bluffs 80 per cent. and Omaha 90 per cent. Kansas City increased from 32,260 to 55,818; St. Joseph, Atchison and Leavenworth together from 44,492 to 64,140—Leavenworth actually decreasing in population. Omaha and Council Bluffs are favored by the absence of important towns north and south of it for a long distance.

The country which supports these towns grows and prospers; but it is not growing at the very rapid rate of earlier years when most of the choice land west of them was to be had for the taking or for a trifling sum; the current of immigration is now to the country far north of them, northwest of St. Paul and even north of the United States. Or rather, it is there where there is the greatest settlement of new lands; for the largest part of the immigration does not go to new farms nor to any farms.

The new country thus developed northwest of St. Paul is 600 to 850 miles from Chicago. From Chicago to Fargo is 650 miles; to Winnipeg, 866 miles; from St. Paul the distance is 240 miles to Fargo and 457 to Winnipeg. The settlement of the Red River valley and the country further west on the lines of the Hastings & Dakota, the Northern Pacific, the St. Paul & Manitoba and the Canadian Pacific roads thus gives opportunity for the development of a new and really important traffic centre somewhere northwest of Chicago.

When the Northern Pacific was projected, it was supposed, and with good reason, that the emporium of the great wheat country in the Red River valley and beyond would be at the west end of Lake Superior, at Duluth, or Superior, or possibly Bayfield or Ashland. At that time rail transportation was too costly for wheat produced so far from the seaboard—1,600 miles and more—and by far the larger part of the Western wheat was sent to the East and Europe unground, and there was no extraordinary demand for grinding in the Northwest. Duluth is about the same distance from Buffalo by lake as Chicago; it was assumed that the wheat must go east by lake, and that the saving of the rail haul of 400 miles to Chicago would insure the carriage to a Lake Superior port.

But while the Northern Pacific and the Manitoba roads were waiting, and by the time the wheat country on their lines fairly began to develop, there was an important change in the circumstances. Railroad transportation was so much cheapened that great quantities of grain were taken from Kansas and Nebraska to the seaboard 1,500 miles or more through by rail—even corn was so taken when worth less than half as much as wheat per bushel. Flour, being much reduced in weight from the wheat of which it is made, was carried almost entirely by rail. And it was found that by new processes of milling the making of a superior quality of flour from the hard wheat of the Red River valley was a profitable business at Minneapolis, where there is great water power from the falls of St. Anthony. The capacity of the mills there was increased faster than the area devoted to wheat production, and now that there is a large and growing production in the Red River valley and beyond, which could be taken to Lake Superior by a haul of 250 to 350 miles, the wheat is not taken to Duluth because it is needed to keep the Minneapolis mills going. There has been, we believe, no such development of manufacturing of farm products close on the edge of a newly-settled country elsewhere in the country. St. Louis was a great flour manufacturing city many years ago, but there the business developed much more slowly. More like it is the rapid growth of beef and pork packing in Kansas City, which reduces the raw materials of the farm into lighter and more valuable manufactured goods before they have been transported far.

This great development of flour manufacturing at Minneapolis seems to have determined—at least for the present—where the new great traffic centre northwest of Chicago shall be—at the twin cities of St. Paul and Minneapolis, which, much more than Omaha and Council Bluffs, tend to become one city, Minneapolis having by far the most of the manufacturing, and St. Paul being the chief trading city, and so each profiting by the growth of the other. There is no little jealousy between them, however, as may be seen even in the names of railroad companies, two being made long and awkward by containing the names of both cities, which are barely 10 miles apart from centre to centre—as if we should have a "New York, Newark & Pittsburgh Railroad," or a "New York, Brooklyn & Boston." By the census, these places had 33,096 inhabitants in 1870 and 88,935 in 1880, St. Paul increasing

107 per cent. and Minneapolis 260 per cent. in the decade, and Minneapolis being the larger by 5,300 in 1880. Their growth since 1880 has probably been much greater than at any time before, as it is in the last two years that there has been the greatest immigration to Dakota and Manitoba, all going by way of St. Paul and Minneapolis, which are the centre of supply also for the new country.

Further indication that here, and not on Lake Superior, is to be the traffic centre of what the newspapers there call the "new Northwest" (an inconvenient term to use where Washington and Oregon, the true "Northwest," are also developing and coming into closer connections with the rest of the country), is the fact that the Northern Pacific has secured a line of its own into St. Paul and established its headquarters there.

Some illustrations of the growth of the more important traffic of Minneapolis will be found below, the statistics having been taken from the Minneapolis Tribune of Jan. 1. The business of St. Paul is not so easily measured, as it consists more in sales of merchandise, its receipts of grain, etc., being comparatively unimportant.

The production of the two great industries of Minneapolis for the last two years has been :

	1882.	1881.	Inc. or Dec.	P. c.
Flour, bbls.	3,124,219	3,480,000	Dec. 355,781	10.2
Lumber, M ft.	312,239	230,404	Inc. 81,835	35.5

The decrease in flour was due to the poor crop of 1881—more to its bad quality than to the amount produced, which in Minnesota and Dakota together was not much less than in 1880. The Minneapolis mills do not grind much of the lower grades of wheat. The capacity of the mills was greater in 1882 than before, and since the last harvest they have been producing more than ever before.

The receipts and shipments of wheat and flour at Minneapolis for five successive years have been :

	Wheat.		Flour.	
	Receipts.	Shipments.	Receipts.	Shipments.
1878	5,040,900	189,200		
1879	7,991,913	177,400	121,900	1,551,789
1880	16,914,100	133,600	103,000	2,051,840
1881	17,167,250	514,750	282,500	3,142,974
1882	18,403,700	1,455,000	290,250	3,049,919

The difference between the great receipts and the small shipments of wheat represents what is ground at the Minneapolis mills, and is seen in the great excess of flour shipments over flour receipts.

New wheat barely begins to go to Minneapolis until September. August was the month of smallest receipts last year, and has always been a month of smaller receipts than any except the early months of the year. The movement in the last four months of 1882 will therefore best represent the crop movement from the previous harvest. For these four months after August the Minneapolis wheat receipts for four years have been :

	1879.	1880.	1881.	1882.
Bushels.....	3,173,673	4,657,300	6,341,250	9,299,700

In 1882, therefore, the receipts were 44 per cent. more than in 1881, 100 per cent. more than in 1880, and 193 per cent. more than in 1879.

It will be a great mistake, however, to suppose that this great increase in Minneapolis receipts indicates a corresponding increase in the production of Minnesota and Dakota, from which it receives wheat. In the first place, the increase in milling capacity has been enormously greater than that in wheat production, so that the mills now take a larger proportion of the total production than formerly, and would probably take a larger quantity, even if less were produced instead of more. Secondly, while the increase in production in Minnesota and Dakota last year was perhaps 25 per cent., the increase in the kind of wheat which the Minneapolis mills grind was very much greater. The increase was chiefly in Northwestern Minnesota and in Dakota, where the wheat is of superior quality, and where there are fewer local mills to grind the grain than in Southern Minnesota. But so far as Minneapolis trade is concerned, the increase since the last harvest is significant. The receipts exceeded the shipments in these four months 8,691,200 bushels in 1882, against 5,956,500 in 1881; part of this may have gone to increase the stocks on hand, but it indicates that the mills will manufacture about 24,000,000 bushels of wheat during this crop year if they can get it.

The maximum capacity of the Minneapolis mills is reported at 25,650 barrels daily, or about 9,000,000 barrels a year, at the beginning of this year, being an increase of 4,525 barrels per day, or 21½ per cent., within a year. The mills are able to grind all the wheat produced in Minnesota and Dakota not required there for food and seed.

The existence of the great mills at Minneapolis gives promise of unusual stability to its traffic—to its receipts and shipments of grain at least. These mills will not be permitted to lie idle if there is any profit, however small, in making flour. If, when the surplus production of the country from which they draw

wheat is 40,000,000 bushels they grind 20,000,000, they will grind little less if, in a bad year, the production falls to 30,000,000. The wheat will go there rather than go through to the lakes or the East.

There is thus good reason for the importance which the railroads have placed recently on the traffic of St. Paul and Minneapolis. A new traffic centre already important and likely in the near future to become much more so has there grown up. Aside from the development of the Red River Valley, and other parts of Dakota and Manitoba, there is the business of the trans-continental line of the Northern Pacific, of which St. Paul will be the Omaha, which is likely to bring it a large business in live stock, of which heretofore it has had little. The business of Manitoba may, perhaps, be diverted largely when the Canada Pacific is fully opened from Lake Superior to Winnipeg (the distance is about the same as from St. Paul to Winnipeg). The tariffs of the two countries probably will be a great obstacle to supplying Manitoba with merchandise from St. Paul, possibly to the export of wheat from Manitoba to Minneapolis; but with Lake Superior closed six months in the year, the intercourse must be considerable, and especially the immigration and the other travel are likely to continue to be through the United States. It will be a long time before the 650 miles of the Canada Pacific, between Lake Nipissing and Thunder Bay, through an utterly desolate country, will enable this company to carry the Manitoba traffic through to Canada, as it will doubtless first build in the fertile country, as it has been doing.

There is a greater extent of fertile country west and northwest of St. Paul and Minneapolis than west of any of the Missouri River towns, and doubtless much more wheat will some time be grown there. But its very extent is likely to cause the growth of a local traffic centre northwest of St. Paul, probably at Fargo, which will be to St. Paul and Minneapolis what the latter are to Chicago and Milwaukee. This place, however, is hardly likely to be a great market for farm products; the grain and cattle once loaded on the cars will nearly all go through to the Minneapolis mills or to some lake port or even through to the East. The mills at Minneapolis secure it a position as a wheat market that scarcely any other place in the country except a lake or ocean port can attain. Even the lake ports, with the cheapening of rail transportation, lose their importance as grain markets. More and more of the grain goes through them without stopping; the proportion sold and transferred in them grows smaller. The process of eliminating as much as possible all intermediaries between the producer and the consumer goes on: but it will never eliminate the miller.

LOCOMOTIVE BOILERS.

It is a very singular fact that the locomotive boiler of to-day is substantially the same in principle and construction as that which was used in the engine "Rocket," built by Stephenson in 1829. In that boiler there was a fire-box surrounded with a water space, and the horizontal tubes in a cylindrical barrel, as in the present boilers. The Stephenson fire-box has a flat top similar to that used on the Pennsylvania and the Reading railroads, and curiously too, the boiler in the "Rocket," which is now in South Kensington Museum, has butt-joints. Whether this is the original boiler that was first made for the engine we are unable to say, but in the two particulars named the most recent practice of the present day was anticipated in the first experiment made more than fifty years ago. Every person who has had anything to do with locomotives knows that since that time the inventions for the improvement of locomotive boilers have been numberless. The brick arch and the furnace-door deflector have, however, been the only improvements which have come into anything like general use since the early experiments were made on the Liverpool & Manchester Railway in the infantile days of railroads. There have been many improvements made in the attachments to boilers now in use, such as grates, chimneys, smoke-boxes, safety-valves, gauges, feeding apparatus, etc.; but, with the two exceptions named, there has been no change in the principles or construction of the appliances for the generation of steam. That an invention should be given to the world almost perfect and complete in principle in the beginning is a little remarkable.

The construction and operation of locomotive boilers, however, has been a continued subject of discussion and investigation ever since locomotives have been used. The Master Mechanics' Association, in this country, almost from its beginning, has had a committee appointed annually to investigate and report on this subject. As has been said before, there has been an immense number of inventions made to improve the operation and construction of such boilers. This

continued striving after improvement without achieving it indicates either that the locomotive boiler is nearly perfect in principle, or else that the efforts made have been misdirected. At the same time it may be said of locomotive boilers, as some one has said of men, that they do not differ much from each other, but that the differences are of the utmost importance. It is a fact, as every master mechanic knows, that two boilers which seem to differ very slightly in form, proportions and construction will nevertheless be very unlike in their performance. Experience shows that their proportions are of the utmost importance. In the early days of railroad engineering, and until quite recently in this country, this fact seemed to be lost sight of. So much attention was given to what may be called the functional action of the generation of steam that the proportion of parts was lost sight of. Thus, in the early days of wood-burning engines in this country, locomotives had fire-boxes which were deep, but with comparatively small grates. The amount of fire in these fire-boxes was only limited by the quantity of wood which they would hold, as the height of the pile of wood above the grates did not affect the combustion. When, however, coal was substituted for wood, then it was found that if the layer of fuel on the grates was increased above a certain thickness combustion was checked. It was then that all kinds of devices were tried to promote combustion. Grates of all sorts, blowers, steam-jets, etc., etc., were experimented with, and all failed until experience showed that all that was required to make an efficient coal-burning engine was to make the grate large enough, with movable bars for some kinds of coal, to remove the clinkers. When this principle was recognized, some locomotive builders hastily concluded that for burning coal the larger the grate the better. Winans, in Baltimore, and some other builders, therefore made the grates of their engines excessively large. The consequence was that while the old wood-burning locomotives could not burn wood enough in their fire-boxes, the grates which were too big admitted so much air through the layer of fuel on them that it diminished the temperature of the fire-box above the fire so that the boilers required a great deal of fuel. It is only within a few years that the principle has been distinctly formulated that "there may be too much grate area for economical evaporation, but there cannot be too little, so long as the required rate of combustion per square foot does not exceed the limits imposed by physical conditions." In other words, a grate cannot be too small, provided you can burn coal enough in it. Of course, the size of the grate will depend somewhat on the character of the fuel and also on the form, proportions and arrangement of grate-bars. Thus anthracite coal, which burns slowly, requires more grate area than bituminous coal, and a good quality of the latter less than that which is very impure. It seems certain, however, that with a given quality of fuel and capacity of boiler there is some size of grate which will give better results than one either larger or smaller. The degree of economy of a locomotive boiler, therefore, depends very largely upon the proportion which its grate area bears to the other parts. By grate area is meant that part of a grate only which is perforated or has openings for the admission of air, dead-plates not being included in the area.

When the fact was once established that the smaller the grate area, provided coal enough could be burned on it, the greater the economy, some persons hastily concluded that if the grate were reduced in size, the fire-box should also be diminished. A little consideration will show, however, that this does not follow. As the late Mr. Hudson was in the habit of saying, what should be aimed at in a locomotive fire-box is intensity of combustion. The reason for this is that with a high temperature in the fire-box and tubes the heat is transmitted to the water much more rapidly than it will be if the temperature is low. Furthermore, if the temperature of the products of combustion when they leave the fire is comparatively low, their bulk must be greater to contain a given quantity of heat than it would be if they were very hot. In other words, if the combination of smoke, gas and air which leaves the fire has a temperature of 2,000 degrees, there will be more units of heat in a given number of cubic feet of it than would be contained in the same quantity having a temperature of 1,500 degrees. It follows then that if a temperature is low a larger bulk of the products of combustion must be passed through the tubes to transmit a given quantity of heat than would be required if the temperature was high. Consequently, with a given rate of temperature, if the temperature is low more gas and air and smoke must pass through the tubes than would be required if they were hotter, and consequently the

speed at which they move must be greater, and the time allowed for the transmission of their heat to the heating surfaces will be less. But the rate of transmission of heat is proportionate to the difference of temperature, so that with the colder gases not only is the rate of transmission slower, but there is less time for it to take place. It is therefore plain why intensity of combustion is so desirable. Now to secure intensity it is requisite to combine as much oxygen as possible with carbon or other combustible material in the shortest time and in the least space possible. In heating a piece of iron to a welding heat, a blacksmith aims to do this with his bellows and forge. He uses a small grate and a strong draft. That is, by forcing a strong current of air against a mass of burning coal he aims to make as much oxygen combine with the carbon as possible in the time and space. The same thing is done in a cupola for melting iron, and in a blast furnace, and a similar action ought to be aimed at in a locomotive fire-box.

But while it is desirable that the space in which the air and solid fuel are brought into contact with each other should be as small as possible, such is not the case when the fuel assumes a gaseous form, as it does above the fire. Its bulk is then increased, and much more space and time are needed for the air and gases to combine. It is evident that if there is much space in the fire-box above the grate, with a given rate of inflow, the air and gases will remain there a longer time than they would if there was little space. It is like a stream flowing into a pond at one end and out at the other. If the pond is large the water remains in it a longer time than it would if it was small. For the purpose of allowing time and space for the air and gases to combine and combust—to employ the latter word in an obvious sense in which it is not ordinarily used—the space in the fire-box above the grate should be as large as it is possible to make it in a locomotive.

Besides this reason, it is also desirable that the temperature of the combustible gases and of the air should be as high as possible until after combustion has taken place, as it is thus more complete than it would be if they were allowed to cool down. Now if the space in the fire-box is small, the gases and air soon come in contact with the comparatively cool heating surface, and they are consequently reduced in temperature before they burn. If the space is larger, a longer time intervenes after the gases leave the fire before they are cooled, and there is thus opportunity for combustion to occur before a reduction of temperature takes place.

After the process of combustion is completed, it is then important that the products resulting therefrom should be brought into intimate contact with the heating surfaces, and that they should be permitted to remain in contact as long as possible, in order that their heat may be transmitted through these surfaces to the water. The greater the area of heating surface of course the longer will the burned gases be in contact with them.

The reason is therefore obvious for the deduction, which was made by D. K. Clark from experiment, that "practically, there can never be too much heating surface, as regards economical evaporation, but there may be too little."

Some years ago an erroneous deduction was often made from what was observed of the action of locomotive boilers. It was noticed that it took less time to get up steam in locomotive boilers which had a small amount of water-space than in those which had much. It was therefore inferred that more steam could be generated in a given time in such boilers than in those which contained more water. This was of course a mistake, as the only reason why steam could be raised more quickly was that there was less water to heat, and it therefore took less time. With more water, more time would be taken to heat it, but after it was all hot the rate of evaporation would be the same whether there was much or little water. When there is much water, however, there is the advantage that when it is all heated up it furnishes a greater quantity of what is practically stored-up power, which can be employed when the engine is worked unusually hard. There is also the advantage that the store of water acts in a measure as a regulator of the fire, absorbing any excess of heat, and giving it out when there is too little.

The general principles of locomotive boiler proportion may then be summed up as follows:

1. The grate cannot be too small, provided coal enough can be burned on it.
2. The fire-box, heating-surface and water capacity of the boiler should be as large as possible.

Inasmuch as the weight of a locomotive and the space which it can occupy are necessarily limited, of course the size and weight of the boiler are also restricted, so that the practical principle which controls

boiler proportion is, that within the limits of weight and space to which it is necessarily confined a locomotive boiler cannot be too big.

The Chicago & Alton Report.

The Chicago & Alton Company, an abstract of whose annual report we published last week, is the first of the Chicago railroads to report for 1882. This road, though it passes through the heart of a rich agricultural country, does not depend so much as some other roads west of Chicago on agricultural traffic. For instance, the total receipts of leading farm products at Chicago in 1881, and the quantity and proportion by the Chicago & Alton were:

Chicago receipts.	By Chi. & Alt. Quantity.	P. c. of total.
Flour, bbls ..	4,815,239	117,500 2.4
Wheat, bu.....	14,824,900	10,916 0.7
Corn, bu.....	78,393,315	3,850,079 4.9
Oats, bu.....	24,861,538	1,395,099 5.6
Cattle, No.....	1,498,550	161,076 9.3
Hogs, No.....	6,527,679	465,200 7.1

Only as a carrier of cattle and hogs to Chicago can it be said to have been important that year. It is, however, hardly to be judged by its deliveries at Chicago as much as the other Chicago roads, because it has two termini, and delivers produce at St. Louis as well as Chicago; and, moreover, a considerable portion of the through freight which it carries northward to go east over a Chicago road leaves it at Joliet by the "cut-off." In 1881 and 1882 the freight delivered at St. Louis by it was 37½ per cent. of the quantity delivered at Chicago; and the total number of bushels of wheat which it hauled between any two stations in 1881 was 33 times the quantity it delivered at Chicago, and of corn, 2½ times as much. It remains true, however, that the agricultural traffic of the road is not so important, directly, as that of most of the other Chicago roads. On the other hand, out of 1,356,827 tons of Illinois coal received at Chicago in 1881, 731,709 tons, or 54 per cent., was brought by the Chicago & Alton. It connects the two great cities of the Northwest; on its lines in Illinois are many large and growing towns in which there is much manufacturing, and to a considerable extent this is true in Missouri also, where its road is new indeed, but the country on it was the first in the state to be settled, being near the Missouri, which afforded an outlet when there were no railroads. Throughout the West in country as long settled as this there is rarely any growth of the farming population. The country grows, and often very rapidly, but the growth is wholly in the towns, and consequently the carriage of farm products, unless a great through traffic from new country is developed, as from Kansas, etc., becomes a smaller and smaller proportion of the total business of such a road as the Chicago & Alton. In the report for 1882 there is a very interesting statement of the earnings from farm products shipped from local stations, showing that they were but 19.8 per cent. of the freight earnings and 14.6 of the total earnings in 1881, and a trifle less in 1882.

It will be a mistake to suppose, however, that because this road is not now to a great extent directly dependent upon farm products it is not so indirectly. In fact it is so almost entirely, as are, to a somewhat less extent, the railroads in New York and New England. The industries which afford the non-agricultural traffic depend almost entirely upon the progress of agriculture. Should that be arrested, their market would dwindle at once; when it grows fast, they have to be extended to supply its wants. But whereas not so long ago the traffic of the road depended chiefly on the crops produced along its own lines, now it depends on the production over a vastly larger territory; Texas, Colorado, Kansas and other and even more distant districts produce what is carried over its road, and, more important still, perhaps, furnish a market for the manufacturing industries which are prosecuted on its lines. The result is that a failure of crops on its own lines is much less important than formerly, because it affects a much smaller proportion of its total traffic; and even a general failure of crops throughout the country which markets its produce over it does not directly greatly affect the local industries which, though really dependent upon the prosperity of the farmers, do not depend upon their prosperity in any one year. For instance, the various industries on the Chicago & Alton were probably about as active during the year following the very bad harvest of 1881 as in any previous year; but if there should be a series of bad crops, and especially if there should cease to be a growth of farming, grazing and mining in the vast territory west of the Missouri and southwest, they would certainly have to limit their production.

But such roads as the Chicago & Alton have now become to the country west of them much what the trunk lines are to the whole country west of Buffalo

and Pittsburgh. They are through lines, and the large population living at their stations is largely engaged in producing goods which the country further west consumes, and unless the through freight becomes exceptionally large, the passenger traffic assumes a much greater importance. The Chicago & Alton had 101 millions of passenger miles in 1882, against 37½ in 1878—an increase of 270 per cent. in four years, during which the freight traffic increased from 248 to 475 millions of ton miles, or 92 per cent. Extraordinary circumstances caused a reduction of its average passenger rate meanwhile, such as has occurred on scarcely any other road east or west, and in spite of this much greater growth of its passenger traffic, its passenger earnings, which were 23 per cent. of its total earnings in 1878, increased only to 24 per cent. in 1882. With an increase of 270 per cent. in passenger traffic there was an increase of but 75 per cent. in passenger earnings, the average rate having fallen from 2.88 cents to 1.951 cents per mile—an occurrence common enough in freight traffic, but rare in passenger traffic.

On this road the effect of the bad harvest of 1881 was felt more in 1881 than in 1882, when the gain in wheat more than made up for the loss in corn, and there was an increase of 6½ per cent. in freight earnings from 1881 to 1882, against a decrease of 4½ per cent. from 1880 to 1881. The freight traffic, however, was slightly less last year than in 1880, though the freight earnings were 2½ per cent. more last year—less railroad war and consequently a little better average rate. Indeed, the average freight rate has increased every year since 1879, and was 20 per cent. higher last year than in 1879. Part of this, however, may be due to the smaller proportion of grain last year, the rate on that freight being much below the average.

The aggregate result of the business last year was an increase over 1881 of 8.3 per cent. in passenger and 6½ per cent. in freight traffic; an increase of 8.7 per cent. in gross earnings, of 8.1 per cent. in working expenses, and of 9.4 per cent. in net earnings, the latter increase amounting to \$31,586, which is \$2.36 per share of stock outstanding at the beginning of the year.

The road continues to increase its average train-load. The gain last year was not great, but compared with earlier years it is very important and has doubtless had much to do with the increase in net earnings. In several years the average number of passengers and tons of freight per train have been:

	1875.	1878.	1879.	1882.
Passengers.....	42,2	41.5	48.7	65.3
Tons	124.0	138.0	161.0	180.0

The report gives the following interesting statistics of freight which it carried to or from each of its three principal termini, as follows:

	Chicago.	St. Louis.	Kansas City.
Passengers to ..	151,204	131,935	68,381
" from	163,160	123,784	62,033
Tons freight to ..	1,642,962	360,326	282,072
" " from	619,198	351,172	230,052

It appears from this, that the number of passengers to and from St. Louis over the road is but about one-fifth less than the number to and from Chicago, while the Kansas City passengers are but half as many as those to and from St. Louis. In freight the pre-eminence of Chicago was much greater. The Chicago & Alton carried to it four and one-half times as many tons as to St. Louis and nearly twice as much from it. The fact that nearly as much was carried from St. Louis as was carried to it is easily understood when we consider that the Chicago & Alton is one of the trunk lines to the East from St. Louis, as well as one of its connections with Kansas City. The latter place, it appears, received but a fifth less and shipped but a third less than St. Louis. It seems remarkable that the road should have carried more to Kansas City than it carried from it. The Alton road can bring it little or no farm produce, but chiefly merchandise and lumber; while it takes thence coarse freights—grain, live stock and provisions. As the Alton is only one out of six roads which carry from Kansas City to the East, the importance of the business of that new city may be imagined.

January Accidents.

Our record of train accidents in January, given in full elsewhere, shows for that month a total of 168 accidents, in which 55 persons were killed and 199 injured. The record includes 54 collisions, in which 8 persons were killed and 49 injured; 105 derailments, in which 42 persons were killed and 141 injured, and 9 other accidents, in which 5 persons were killed and 9 injured.

Thirty of the killed and 61 of the injured were railroad employés, 25 of the killed and 138 of the injured being passengers or others riding on the trains. Employés thus constituted 54.5 per cent. of the killed, 30.7 per cent. of the injured and 85.8 per cent. of the whole number of casualties—an unusually small proportion.

In 24 accidents one or more persons were killed; in 34 others there was injury, but not death, leaving 110, or 65.5

per cent. of the whole number, in which there was no serious injury to persons recorded.

As compared with January, 1882, there was an increase of 31 accidents, of 14 in the number killed, and of 1 in the number injured.

These accidents may be classed as to their nature and causes as follows:

COLLISIONS:	
Rear collisions.....	25
Butting collisions.....	15
Crossing collisions.....	4
	54

DERRAILMENTS:	
Broken rail.....	23
Broken or defective frog.....	2
Broken switch-rod.....	4
Broken bridge.....	2
Spreading of rails.....	14
Broken wheel.....	3
Broken axle.....	10
Broken truck.....	1
Wind.....	1
Land-slide.....	2
Snow or ice.....	7
Accidental obstruction.....	2
Misplaced switch.....	7
Running off end of siding.....	1
Runaway train.....	2
Rail removed for repairs.....	3
Unexplained.....	21
	105

Boiler explosions.....	2
Broken connecting-rod.....	2
Broken axle not causing derailment.....	2
Broken wheel not causing derailment.....	3
	168

Total.....

COLLISIONS. DERRAILMENT. OTHERS. TOTAL.	
Defects of road.....	45
Defects of equipment.....	15
Negligence in operating.....	9
Unforeseen obstructions.....	26
Maliciously caused.....	17
Unexplained.....	21
	168
Total.....	54

Negligence in operating was the direct cause of 35 per cent. of the whole number of accidents.

Of the accidents contained in the record 99 happened in daylight and 68 at night, while in 3 cases the time is not indicated.

One of the broken bridges failed on account of the partial washing out of its abutments by a freshet.

A division according to classes of trains and accidents is as follows:

ACCIDENTS: COLLISIONS. DERAILMENT. OTHER. TOTAL.	
To passenger trains.....	3
To a pass. and a freight.....	20
To freight trains.....	31
	84
Total.....	54

ACCIDENTS: COLLISIONS. DERAILMENT. OTHER. TOTAL.	
Killed by.....	8
Injured by.....	49
	55
Total.....	57

Total.....

Accidents are thus recorded to 222 trains, of which 87, or 39.2 per cent., were passenger trains, and 135, or 60.8 per cent., were freight trains. The true proportion of accidents to freight trains is doubtless much greater.

The month was a severe one, with heavy snow-storms and very cold weather. This is clearly apparent in the record, which is notable for the many accidents resulting from broken rails and other breakages of iron and steel. A number of accidents also appear which were attributable even more directly to the weather, such as the snow derailments, while some of the unexplained derailments are probably due to the same causes. The total number of accidents due to breakages of iron and steel was 49, or 29 per cent. of the whole number, while in July last the number of accidents from similar causes was 15 only, a contrast which indicates pretty clearly the effect of the season.

A frequent cause of accident seems to be the inability of trainmen and trackmen to estimate distances correctly, especially the distance in which a train can be stopped. In very many cases where a train is signaled the signals are not set out far enough, and where trains run with extras there is not sufficient distance kept to permit a train to be stopped in case of accident to the preceding one. It seems as if a more general adoption of specific rules and a more careful instruction of trainmen might prevent many accidents which result from these causes.

For the year ending with January the record is as follows:

ACCIDENTS. KILLED. INJURED.	
February.....	88
March.....	99
April.....	81
May.....	94
June.....	72
July.....	92
August.....	139
September.....	153
October.....	136
November.....	125
December.....	148
January.....	168
	1,396
Totals, same months, 1881-82.....	1,372
" " " 1880-81.....	1,239
" " " 1879-80.....	859
	3,613
	334
	1,304
	669
	1,589

The number of accidents in January was the largest of any month of the year. The number of killed was also the largest, but the number of injured was exceeded in August and December.

The averages per day were, for the month, 5.42 accidents, 1.77 killed and 6.42 injured; for the year, 3.82 accidents, 1.08 killed and 4.35 injured.

The average casualties per accident for the month were 0.327 killed and 1.184 injured; for the year they were 0.282 killed and 1.139 injured.

The averages per month for the year were 116 accidents, 33 killed and 132 injured, against similar averages of 114 accidents, 35 killed and 134 injured in 1881-82; 103 accidents, 28 killed and 109 injured in 1880-81; 72 accidents, 14 killed and 56 injured in 1879-80.

Pennsylvania Railroad Earnings and Expenses in January.

The gross and net earnings and expenses of all the Pennsylvania lines east of Pittsburgh and Erie this year and last compare as follows:

	1883.	1882.	Increase.	P.C.
Gross earnings	\$3,029,357	\$3,373,321	\$556,036	16.5
2,458,299	2,299,055	159,244	6.9	
Net earnings.....	\$1,471,058	\$1,074,256	\$396,792	37.0

The increase both in gross and net earnings is unexpectedly large—larger than in November or December.

Last year, January was a month of heavy through traffic, but the lowest of rates, yielding probably no profit. Some other business, however, was better than this year. This year the through traffic has been reasonably large, though less than last year, and remunerative rates were received for carrying it. The gross earnings were less than in December, but not so much less as is usual. The working expenses were the smallest since May last, but January expenses usually are below the average. The net earnings were much larger than in December, but less than in any previous month since April; net earnings in January are unusually much below the average.

For eleven successive years the gross and net earnings and working expenses of these lines east of Pittsburgh and Erie have been:

January Earnings and Expenses, Pennsylvania Railroad, for Eleven Years:

Year.	Gross earnings.	Expenses.	Net earnings.
1873.	\$2,754,284	\$2,194,652	\$559,632
1874	2,856,165	1,736,489	1,119,676
1875.	2,290,339	1,630,767	659,572
1876.	2,447,685	1,681,760	765,925
1877.	2,383,566	1,656,044	727,522
1878.	2,396,297	1,518,098	878,199
1879.	2,543,424	1,523,893	1,019,531
1880.	3,083,551	1,717,253	1,366,298
1881.	3,189,215	1,982,354	1,206,861
1882.	3,373,321	2,299,055	1,074,256
1883.	3,029,357	2,458,299	1,471,058

Thus we see that last year the earnings were not small, except in comparison with previous months: they had never before been so large in January. But the increase over last year is larger than there had ever been before—larger even than in 1880. The increase this year over 1880 is 27½ per cent. in gross earnings, 43 per cent. in expenses, and but 8 per cent. in net earnings. But net earnings had been decreasing since 1880 until this year, when they make the great gain of 37 per cent. over last year and become, like the gross earnings, larger than ever before in January.

The lines west of Pittsburgh and Erie in the month of January show a surplus over all liabilities of \$174,981, which is \$132,233 more than last year, and makes the increase in the profits of the two systems \$529,025, which is about ¾ per cent. on the capital stock now outstanding.

The surplus over liabilities of this western system in January for five years has been reported as follows:

1879.	1880.	1881.	1882.	1883.
\$161,627	\$305,304	\$381,207	\$42,748	\$174,981

The liabilities of the lines of this system are some of them contingent, apparently, and cannot be stated exactly until after the close of the fiscal year. Last year the statement made the surplus for January only \$9,740, while now it is reported that it was \$42,748.

We see that though the surplus was much greater this year than last, and a little greater than in 1879, it was much less than in 1880 or 1881. Most of the western lines depend largely on agricultural freight; but some of them, like the Cleveland & Pittsburgh and the Erie & Pittsburgh, are chiefly coal and iron roads, and other larger ones have a great traffic in coke, coal and iron, and will be considerably affected by the condition of these industries. They did very poorly in the first half of last year, however, netting a loss of \$120,000 then against a profit of \$1,573,000 in 1881.

The result in January on the whole system has been very good indeed, and much better, we should say, than the prevailing opinion of the condition of business would lead the public to expect. In fact, there was an unusual gain in January, not equal to the extraordinary gains in August, September and October, but still remarkably large, and showing no indication of the disturbance of the iron industry which affords this company so large a part of its traffic.

In February, the traffic, especially of the western system, was considerably affected by the floods, and perhaps it will not make so favorable a comparison with the corresponding month of last year, which, however, was the least productive month of the year.

Experiments on Steel and Iron Bridge Girders—Errata.

In the account given by Mr. Charles Bender of the important experiments at the Harkort Works, made by the Dutch engineers, published in the *Railroad Gazette* of Jan. 26 last, there were several typographical errors, some of which are important.

Page 55, first column, in the second paragraph, third line from its close, for "Harkort" read "Harkort"—the name of works where the experiments were made.

In the ninth line of third paragraph, for "42" read "32." Page 56, second column, fourth line below the table, for "nor" read "nay," which completely reverses the affirmation made of the strength of bolted compared with riveted girders.

Same page, third column, fifth line below table, for "Stuppe" read "Styffe."

Record of New Railroad Construction.

This number of the *Railroad Gazette* contains information of the laying of track on new railroads as follows:

New Orleans & Northeastern.—Extended from Enterprise, Miss., southward to Arata, 16 miles. Track is also laid from Lake Ponchartrain, La., northward 8 miles.

Northern Pacific.—Track on the western end is extended eastward to near the third crossing of Clark's Fork in Idaho, 15 miles.

Rochester & Pittsburgh.—Extended southward to Dubois, Pa., 13 miles.

This is a total of 52 miles, making 220 miles thus far reported for 1883, against 452 miles reported at the corresponding time in 1882, 199 miles in 1881, 497 miles in 1880 and 97 miles in 1879.

THE ILLINOIS CENTRAL has determined to divide among its shareholders, part of the stock of the Chicago, St. Louis & New Orleans Railroad which it owns, giving to each New Orleans stock equal to 17 per cent. of his holdings of Illinois Central stock. The Illinois Central came into possession of the New Orleans road first by buying an issue of \$5,000,000 of the latter's second-mortgage 7 per cent. bonds in 1874, for which it gave £1,000,000 of its own 5 per cent. bonds. In 1876 the New Orleans Company (its name then was "New Orleans, St. Louis & Chicago") failed to pay the interest on these bonds held by the Illinois Central, and its road was sold at foreclosure sale in 1877. In the reorganization the Illinois Central received 66,700 out of a total of 100,000 shares of the new company for part of its claims, thus giving it control. Last year the Illinois Central leased the road for 400 years, paying as rental the interest on the bonds outstanding and 4 per cent. on the stock. It therefore no longer needs to hold a controlling interest in the stock of the New Orleans Company. It, however, does not make a particle of difference to the Illinois Central stockholders whether they or the company holds the stock. If the company parts with its holdings, it will receive just so much less for dividends on the New Orleans stock and will be able to pay out just so much less hereafter in its dividends on its own stock. The amount of the stock dividend is \$4,930,000, the dividends on which are \$197,200 per year. But the fact that the company does make the dividend is probably interpreted as meaning that its managers are entirely confident that the Illinois Central will not need the dividends on the stock so distributed in order to pay 7 per cent. on its own stock hereafter, as it has done for some time heretofore: and the shareholders have at their disposal an unusually desirable and high-priced security; for, with 4 per cent. guaranteed by the Illinois Central for 400 years, the Chicago, St. Louis & New Orleans stock takes a place as a security ahead of most railroad bonds, and is likely to become a favorite investment for the cautious and conservative capitalist, of whom there are so many in England and Holland, who seek for a security which has a long time to run as well as a wide margin behind it. The width of the margin is the whole surplus over interest and rentals for other roads of the Illinois Central Company, whose debt is exceptionally light. In 1881 this surplus was about \$2,700,000, while the guaranteed interest on the stock of the New Orleans Company is but \$400,000. Not many bonds have so large a margin; but of course the New Orleans stock has not the security of a mortgage. There is nothing in the lease to prevent the Illinois Central from incurring ever so large a mortgage debt on its own property, the interest on which would be a lien prior to the dividends on the New Orleans stock. There is, however, no company which seems less likely to have occasion to increase its debt materially.

CHICAGO THROUGH RAIL. SHIPMENTS EASTWARD for the two weeks ending Feb. 14 and Feb. 21 for four successive years have been:

Week to—	1880.	1881.	1882.	1883.
Feb. 14.....	38,495	54,105	66,449	58,140
Feb. 21.....	46,780	48,921	57,662	61,533

In the first of these weeks the shipments this year were, therefore, an eighth less than last year, but larger than in previous years; for the second week they were 6½ per cent. more than last year, 26 per cent. more than in 1881, and 31½ per cent. more than in 1880.

The percentage of the total shipments that went by each route in each week this year was:

Mich.	Lake	Ft.	P.C. & C.
Week to: C. & G.T. Cen.	Shore.	Wayne.	S. L. B. & O.
Feb. 14..... 9.3	23.5	21.2	12.3 7.8
Feb. 21..... 8.5	23.6	25.4	22.0 11.6 8.9

Thus the two Vanderbilt roads together in the second week of February carried 44.7 and in the third week 49 per cent. of the total shipments, against their 45.5 in the pool, while the two Pennsylvania roads carried 38.2 per cent. in the second week and 33.6 in the third, against their 35.5 in the pool.

The shipments in each week since December have been, in tons:

Jan. 7.	Jan. 14.	Jan. 21.	Jan. 31.	Feb. 7.	Feb. 14.	Feb. 21.
65,900	66,034	53,657	45,029	43,388	58,140	61,533

The average weekly shipments in December were 63,250 tons; November, 50,000, and in October, 34,515.

After the first week of February last year shipments decreased notably, rates having been advanced, while this year shipments have been increasing. Taking the winter as a whole, the shipments have this year been larger than in any other except last year, as follows, in tons:

1879-80.	1880-81.	1881-82.	1882-83.
Dec. to Feb. 21..... 432,757	654,225	741,029	696,347

Thus the shipments this winter have been 6 per cent. less

than last, though rates have been more than twice as high; and the shipments have been 6½ per cent. more than in 1880-81, when the rate was 5 cents higher. The earnings from the shipments must have been about at the rate of \$225 this winter to \$100 last, \$248 in 1881, and \$195 in 1880.

From this time on last year the shipments were much less than in the first seven weeks of the year; but in 1881 the shipments were larger in March than in February, and in 1880 they were the largest ever made in one month with the single exception of January, 1882. In 1879 the shipments were much larger in March than in January or February.

BRITISH RAIL EXPORTS TO THE UNITED STATES IN JANUARY were trifling in amount, as in every month since October last. We shall best understand how small by comparing them with the average monthly exports in previous years and periods since we began to require foreign rails in 1879:

Average per month, first half of 1879.....	1,288 tons
" " " second half of 1879.....	6,140 "
" " " year 1880.....	18,273 "
" " " year 1881.....	24,178 "
" " " 1882 to Oct. 31.....	18,463 "
Amount in November, 1882.....	4,636 "
" " December, 1882.....	6,742 "
" " January, 1883.....	6,093 "

The exports made of late months evidently must have been ordered when rails in this country were much higher than they are now. Steel rails in England are sold for \$25 now, the duty is \$28, and the price in this country is \$40. It is to be expected that unless the price here rises materially, there will be no rails imported after outstanding orders are filled. And as the present low price is made while four of the American steel works are closed and not competing, it is not likely that any advance in price can soon take place sufficient to permit importations.

While we are ceasing to import, other countries seem to more than make good our place in the British market. The exports in January to other countries than the United States for four years have been:

1880.	1881.	1882.	1883.
Tons..... 24,768	22,956	40,634	65,428

Last year we took about 40 per cent. of the total British exports; this year only 8½ per cent. Our takings have fallen off 21,174 tons (78 per cent.); the takings of other countries have increased 24,792 tons (60 per cent.). If the foreign works get work elsewhere to make up for the loss of orders from this country, they will not be so likely to compete with our own mills for the supply of our railroads, even should the prices advance a little here.

THE RAILROAD EXHIBITION AT CHICAGO is promised various curious relics of the early days of railroads, including a locomotive built for a Nova Scotia road by Timothy Hackworth in 1839, some old passenger cars (there are some still running on some Eastern roads which are too antiquated for service, if not enough so for curiosities), rails that were laid nearly 50 years ago, old stone sleepers, such as were laid on the Camden & Amboy Railroad in its first days, etc. The managers of the exhibition report that nearly all the space in the great building is already taken.

Hon. Lucius Fairchild, the president of commission in charge of the exhibition, is in Europe, where he hopes to secure many exhibits. There is, however, so little market here for most European railroad appliances that manufacturers of them have not the ordinary motives to go to the expense of making an exhibit. We will not buy the cars, locomotives, etc., however good they may be, and no one will like to send heavy goods across the sea and to Chicago, which after the exhibition will have to be carried back to Europe.

SNOW BLOCKADES IN MINNESOTA have been so common that both of the great Northwestern companies, the Chicago & Northwestern and the Chicago, Milwaukee & St. Paul have made plans which will enable them to take the traffic of their Dakota lines through Iowa instead of across Minnesota on the way to Lake Michigan. Blockades are not common in Dakota, western Minnesota and central Iowa, and by a north-and-south line in Dakota both these companies can give an alternative outlet for all their Dakota lines over their Chicago-Council Bluffs lines, when their lines across eastern Minnesota or further east are buried out of sight. Both companies have a long line in the James River Valley, in Dakota. These north-and-south lines are to be extended southward and southeastward to connect with their Iowa east-and-west lines. They will also give a short connection between the Dakota prairies and the Iowa coal mines, and make it possible to transfer cars from any western line the other without making a great detour to the east.

THE SOUTH CAROLINA RAILWAY paid 5 per cent. interest on its income bonds for 1882, instead of 4 per cent. as was erroneously stated in our article on the company last week.

Notes Gathered by the Way.

A curious case came before one of our railroad commissioners some time since.

A very small village (B) some half a dozen miles from its line brought a complaint of discrimination against a railroad because it persistently refused to give privileges such as were granted to another village (A) a little distance above and near the line.

On appearing before the Commissioner, the village (B) authorities admitted that they furnished the road with insufficient business to warrant the building of a station, but claimed that as A had a station B had equal right to one. In reply the officer representing the railroad pointed out that if villages such a distance from the line as B might

claim a station directly opposite their few houses (six miles away), the road would soon become studded with stations from one end to the other.

Nevertheless, the Commissioner decided that the road should furnish the station.

One hears but little complaint of railroad commissions, except, perhaps among accountants, who are put to not a little trouble in answering the printed inquiries of their circulars, some of which inquiries, it must be confessed, seem useless, if only in view of the inexact method necessarily used in making a reply. Even railroad officers can ask questions impossible for any sort of record or account to answer, and, on the other hand, it is possible for a little bureau of accountants, with small knowledge of practical railroad work, to make a deal of trouble and dissatisfaction by endless requirements.

Quite often, requirements of account fail from want of system on the part of shop foremen and others. A recent illustration of this fact discovered that the most serious complaints as to the impracticability of a set of shop accounts arose largely because items were first noted in pencil, and then copied in ink into a book.

There has been much saving in the time spent on accounts by making shop reports serve as records in the general office (filed in order), the aggregate of distributed items only being entered on the general account.

There is an opinion among accountants that a convention of their order would result in happy consequences in various ways. Improvements in methods of account, as has been found, extend from one company to another with a certain moderate rapidity; but there remain companies and districts where improvements and improved methods have still to find acceptance. It is not uncommon to hear complaint of some New England roads and of some Southern roads, the one class because they sometimes do not even know what is due them, the other because they persist in remitting (sometimes in not remitting), although the practice of honoring sight drafts for balances is among all the more active roads almost universal. There are, however, one or two companies which require three days' grace before paying a draft; and there are others which will even honor a draft drawn by a Southern road for what is not due it rather than delay the usual course of business.

Methods of settling overcharges of joint account are also in need of improvement. The best methods in use would in such a convention become common property; and not only some of them, but all those necessary to a well-organized system of accounts. There is need for a thorough discussion of the requirements of such a system; it is not uncommon to find admirable features combined with grave defects. So few railroad men have time to write, such opportunities and encouragements as a convention affords are much needed. There is no kind of railroad work so little appreciated as the accountant's.

The suggestion was recently made, by one whose suggestions on such matters are everywhere regarded, that American railroads would willingly bear the expense of bringing here an English locomotive, if any proper person would inaugurate the movement. Such a movement would assume the appearance, at least, of a good investment, an experimentum crucis for what American engineers have claimed to be the peculiarities of our system of operation, as well as a test of the comparative economy and durability of the English machine under American conditions of track, load and distance.

The expense divided among a few of the larger roads would be but a trifle in comparison with any advantage which might result from such a trial.

Foreign Railroad Notes.

The Prussian Minister of Public Works has directed that the instruction given to apprentices in the railroad workshops on Sundays must be outside of the hours in which the chief church service of the day takes place.

On the 2d of November last in Wurzburg, Bavaria, a locomotive engineer, John Willkomm, was decorated with the gold medal for merit of the Order of the Bavarian Crown, awarded by the King, in the presence of a large number of railroad officers and employés. Willkomm has been in the service of the railroad for 35 years.

The German *Locomotive Engineer's Journal* notices numerous festivals in honor of the twenty-fifth anniversary of the entrance of locomotive engineers into their position, some of them quite elaborate affairs, apparently, with music, dancing, speeches, present-making, etc.

In the Province of Victoria, Australia, the government owns and works the railroads. There was an accident on one of them near Melbourne last December, and this made the occasion of a discussion in the Provincial Parliament that lasted five days. There seems to be too much politics in the railroad administration.

The German Imperial Railroad Bureau has been revising the regulations for the transportation of live stock, so as to shorten the time for delivery allowed to the carrier. By the new regulations the carrier is allowed one day for receiving and delivering and one day for every 186 miles (300 kilometers) the live stock is carried. This would allow about six days between Chicago and New York.

The German locomotive engineers complain of the harshness of the laws which subject them to trial and often to imprisonment for accidents for which others are more responsible than they, or which were due to action which seemed best at the time with the knowledge at command. Engineers of long experience and high character have been sent to prison for a week or a month in cases of this kind.

There has been much talk in England of the need of communication from the inside of passenger cars to the "guard," or between the guard and the engine, to prevent accident, crime, etc. There is an electrical apparatus of the kind on the London & Southeastern Railway, but at the last annual meeting of the company the Chairman, Sir Edward Watkin, said that though the company runs about a thousand trains a day, the apparatus had not been used for six months.

The Bavarian state railroad system at the end of 1881 included 78 lines with an aggregate length of 2,668 miles of road, of which only 178 miles were double-track road. The cost had been at the rate of \$83,520 per mile. The equipment consisted of 1,013 locomotives, 2,469 passenger cars, and 15,795 freight cars. The locomotives were in service 1,263,515 hours during 1881, or an average of 1,247 hours each, and ran with trains an average of just 12,500 miles each.

A great Prussian coal road which the government is urging to reduce its rates has announced that a certain reduction in its rates in coal will be made Jan. 1, 1884, if the government will authorize it to convert its 4½ per cent. bonds (about \$22,000,000) into 4 per cent. bonds; and in any case it will make a smaller reduction then, and another one two years later, which seems a good way ahead to fix rates. No road here can tell what rates it will be able to get three years ahead, or even one year.

The city government of Vienna proposed to seek to obtain itself the charter for the proposed city railroad (elevated) there, and to build and perhaps work it itself. With a thoroughly effective government, this would doubtless be the best way. A city railroad is so completely a monopoly and has such intimate relations with the city property, streets, etc., and the regulations for the convenience of the people that there would be great advantage in having it laid out and managed for the common good of the city by the authority which regulates all. Whether they have a city government in Vienna to which such a work could be safely intrusted we do not know. There is certainly none on this side of the Atlantic.

In the last commercial treaty between Austria and Germany is the following concerning publicity of railroad rates:

"For traffic from the territory of one country to that of the other, and for traffic carried across one country to or from the other, the employment of unpublished rates on the railroads is forbidden. The published tariff rates must be applied everywhere and to everybody, to the exclusion of secret repayments (rebates, drawbacks, etc.) The contracting parties will endeavor to have violations of these regulations on the part of the railroad companies suitably punished."

The Prussian government at the end of September last was working 7,116 miles of railroad, the capital of which was at the rate of \$116,000 per mile. For the year ending with September the state roads show an increase in gross earnings of 5.8 per cent. over the previous year, and in working expenses an increase of 7.6 per cent., leaving an increase in net earnings of \$1,500,000, or nearly 4 per cent. There was a profit on most of the railroads lately brought under state management, and in the aggregate the profit on them (over the rental or interest on the price paid for them) was \$1,840,000. The Minister of Public Works closes his report by saying: "As in the previous year, so in the year 1882, the conversion of private into state railroads has been accompanied by the most advantageous consequences in financial respects."

The Austrian Ministry of Trade has finally awarded the charter for the Vienna City Railroad to the English engineers James Clarke Buntin and Joseph Fogerty. There will be nine miles of it, and the estimated cost is but little less than \$30,000,000. The government will have the right to buy the road after 25 years at a price yielding an income equal to the average of the previous three years. The whole is to be completed within four years. When completed, there must be trains in both directions as often as once in ten minutes, and in the morning and evening as often as once in five minutes, from six in the morning till ten at night.

The road will be mainly an iron elevated railroad, forming a belt within the city; but, besides the iron viaduct (5½ miles), there will be about 530 feet of masonry viaduct, 2 miles of cutting, 0.8 mile of embankment, ¼ mile of tunnel and about a sixth of a mile of surface road.

The roadmasters of the Prussian State railroads have directed a petition to the Prussian House of Representatives, in which they ask for various changes in the status of their class, so that they shall have the privilege of traveling on duty in second-class cars, as was formerly the case, instead of

third-class, as now; that they may be given more assistants, and especially clerical help; finally, that in view of the increasing requirements made on them and their various official duties, they may be made equal in work, pay and privilege to first-class store-keepers. At present the roadmasters get from \$335 to \$485 a year, and on the average \$410, ranking above the class of station overseers and station assistants, whose pay is from \$335 to \$450 a year, and \$392 on the average. The first-class storekeepers, whose position the road-masters envy, get \$525 to \$675 a year, and \$600 on the average; the second-class storekeepers get a little more than the roadmasters, \$335 to \$525 and an average of \$435.

By a royal decree of Dec. 19, 1881, it was announced that certain positions as clerks on the Belgium State railroads would be open to women, on the following conditions: The candidates must be Belgians, not younger than 17 nor older than 28, in good health and physically fit for the service required of them, able to furnish bonds to the amount of a thousand francs (\$198), and have a home in the place where employed.

The candidates were to be examined: 1, in the French and Flemish languages; 2, in English and German; 3, in writing; 4, in elementary arithmetic; 5, in the geography of Belgium and of Europe; 6, in administration and accounts. Successful candidates begin with a salary of 750 francs (\$150) per year.

About fifty girls presented themselves at the first competitive examination.

The *Official Railroad Gazette* of the Prussian government announces a long list of persons in the railroad service to whom orders and decorations are awarded. The highest of these is the "Order of the Red Eagle, Class II," which was received by the President of the Berlin Railroad Directory, an officer of about the same grade as one of our railroad presidents, but, of course, a subordinate of the Minister of Public Works; the same order, but of the third class, went to a member of another state directory, and to two officers attached to the ministry of public works—general staff officers, as it were. No less than 18 orders of the fourth class were given, and among the recipients were an inspector of materials, a station inspector, a traffic inspector, and some accounting and other officers. Some fifty simple decorations were given, and among the recipients were ten locomotive engineers, and also conductors, road-masters, baggagemen, switchmen and even track watchmen. These decorations are given to signify that the persons receiving them deserve to be honored for their service or conduct, and they doubtless have an effect in cultivating a devotion to duty hard to secure in any other way. The difficulty is to make sure that those get them who deserve them, and not chiefly those who have made themselves agreeable to their superiors by other arts than devotion to duty.

The report of the Hamburg Chamber of Commerce for 1882 says that it has secured some changes in railroad rates for the benefit of that port during the year, when they were in accordance with the present economic policy of the government. Various special rates for the encouragement of exports were obtained, but on the other hand on the 1st of April and July the previously existing special rates for grain and flour from German ports to the Rhenish provinces and Westphalia were abolished, presumably in the interest of the German farmers, and the arguments of the North Sea merchants did not avail to restore them. The report says that the result has been that the quantities of grain heretofore imported at German seaports have since that time gone to Belgian and Dutch ports and been carried in boats up the Rhine to the interior of Germany and thence shipped by rail. The grain has not been kept out of Germany, and has continued to compete with that produced by German farmers, but German shipping and some of the German railroads have lost the trade.

The Chamber, after long negotiation also succeeding in getting a rebate of \$1.25 per double car-load (44,000 lbs.) on coal from the Rhenish-Westphalian district when exported from North Sea ports, but not applying to that used for ocean steamers or to the local consumption. The reduction, the report complains, is not sufficient. The regular rate amounts to \$1.32 cent. per ton, against \$1.08 to Bremen, and with that rate English coal is imported.

The career of a leading Austrian railroad man is described on the occasion of his being called to the Austrian House of Lords, which is regarded as a remarkable distinction to be conferred on a railroad officer. The person in question is Alois von Czedik, who first became known as Commandant of the "Academic Legion" during the revolutionary year 1848. He was afterward an officer in the Italian campaign, a teacher in gymnasiums (colleges) and scientific schools, a writer on geographical and educational subjects. Then as a member of the Parliament his ability was so demonstrated that he was made "Chief of Section" in the Ministry of Education; losing this position on a change in the ministry, he was ten years manager of a Vienna bank, and then, in 1873, first enters railroad service close to the top—as Vice-General Director of a leading company. In this position he soon won a great reputation, and has for some years evidently been one of the most influential of Austrian railroad men. He is at present President of the Royal Directory managing the western group of government railroads.

Accession without previous special railroad experience to so high an office on a railroad and such rapid rise in this ser-

Edward S. Safford, Division Engineer New York, West Shore & Buffalo Railroad, Newburg, N. Y.; **James Dix Schuyler**, Chief Engineer and General Superintendent Sinaloa & Durango Railroad, Sinaloa, Mexico; **Thomas Wellington Spencer**, Division Engineer New York, West Shore & Buffalo Railroad, Utica, N. Y.; **Russell Thayer**, Chief Engineer and Superintendent Fairmount Park, Philadelphia, Pa.; **Edmund Brownell Weston**, Engineer Water Department, Providence, R. I.

Anderson, Lebanon & St. Louis.—At a meeting held in Lebanon, Ind., Feb. 21, the following were chosen: President, Eli Marvin; Directors, James H. Rice, Jessie B. Marvin, A. A. Thomas, Eli P. Baker, James Nealis, Samuel S. Heath, Wm. L. Higgins, Adolphus Wysong, James S. Harvey, James Jacobs, Samuel L. Carson, Empson T. Lane.

The company has already another board of directors, who claim that this election is illegal and void.

Baltimore & Philadelphia.—The officers of this company, as consolidated, are: President, J. B. Washington; Vice-President, Robert Garrett; Directors, Wm. S. Bissell, H. S. Burgess, Wm. Canby, Wm. M. Canby, John M. Cleave, Victor Dupont, Thomas M. King; Secretary, John C. Farra; Treasurer, W. H. Ijams. The company is controlled by the Baltimore & Ohio.

Boston & Albany.—Mr. G. G. Saville has been appointed Assistant Road Master First Division, and Mr. W. H. Stearns Assistant Road-Master Second Division.

Boston & Lowell.—Mr. Charles S. Mellen has been appointed Superintendent from March 1. Mr. Mellen has served on the Concord road, on the Central Vermont, and as Assistant to Mr. Hocum Hosford, when he was manager of the Lowell road. Since the Boston & Lowell and the Concord roads have been worked together, he has been Auditor of the joint management.

Mr. Mellen announces in a circular dated March 1, the termination of the joint business arrangements between the Boston & Lowell and the Concord railroads, and the executive officers of the Boston & Lowell, as follows: J. F. Crockett, Superintendent of Transportation and Machinery; C. E. A. Bartlett, Treasurer; J. S. Lincoln, General Freight Agent; B. F. Hendricks, General Ticket Agent; Myron Taylor, Chief Clerk. Mr. J. W. Odlin, who has been private secretary for the past year and a half to Manager Sherburne, remains in the same capacity with Mr. Mellen. Mr. J. W. Whittaker becomes Cashier, succeeding Treasurer Bartlett.

Camden & Atlantic.—At the annual meeting in Camden, Feb. 22, the following directors were chosen: James B. Dayton, Thomas H. Dudley, Enoch A. Doughty, Samuel Fox, Wm. L. Elkins, John B. Hay, Benton K. Jamison, Edward P. Kershaw, Crawford Miller, John Pearce, Arnold G. Plummer, Edmund E. Read, Charles B. Stratton, Messrs. Dayton, Dudley, Doughty, Hay and Read re-elected; the others are new directors, representing the Pennsylvania Railroad interest. The board elected Wm. L. Elkins, President; D. M. Zimmerman, Secretary and Treasurer.

Chesapeake, Ohio & Southwestern.—Mr. J. E. Reeves has been appointed Superintendent of Transportation and Telegraphs, vice Mr. F. H. Britton, resigned. His headquarters will be at Louisville, Ky. Train and car reports and orders for cars will be addressed to him at Paducah until further notice, but all other correspondence should be addressed to him at Louisville.

Cincinnati & Baltimore.—This company has elected Wm. T. McClintick, President; Charles F. Low, Secretary; Wm. E. Jones, Treasurer. The road is leased to the Cincinnati, Washington & Baltimore (late Marietta & Cincinnati) Co.

Cincinnati, Indianapolis, St. Louis & Chicago.—This company and the Fort Wayne, Cincinnati & Louisville have issued the following joint notice:

"Mr. A. B. Southard is appointed the General Agent, with headquarters at Jackson, Mich., and will represent the above companies for all business to and from Michigan and Northern Indiana, to and through Indianapolis, Cincinnati, Louisville, and the South, going over our respective roads."

Mr. Southard was recently General Freight Agent of the Louisville, New Albany & Chicago road.

Clefield & Jefferson.—The directors of this company are: Charles Berwind, J. H. Converse, J. N. DuBarry, Aaron Fries, F. S. Lewis, John Reilly, Allison White, Office in Philadelphia.

Concord.—Mr. Frank E. Brown is appointed General Passenger Agent and Mr. Samuel Barrett General Freight Agent. Mr. Brown has been clerk to the Superintendent, and Mr. Barrett Station Agent at Portsmouth.

Denver & Rio Grande.—General Manager D. C. Dodge announces the following changes and appointments, taking effect Feb. 18, 1888:

"R. M. Ridgway is appointed Superintendent of the Fourth Division in the place of J. A. Myers, transferred to the Fifth Division. Cole Lydon is appointed Superintendent of the Second Division in the place of R. M. Ridgway. George W. Cook, in addition to his present duties as agent at Leadville, will have charge as Superintendent of the Third Division in place of Cole Lydon. J. A. Myers is appointed Superintendent of the line between Grand Junction and Green River as the same is completed and turned over by the construction department. This line will be known and designated as the Fifth Division."

General Baggage Agents' Association.—At the convention in New York last week the following officers were chosen: President, J. Van Smith, Baltimore & Ohio; Vice-President, J. L. Freeman, Lake Shore & Michigan Southern; Secretary, Mason B. Starling, Chicago, Burlington & Quincy.

Hartford & Harlem.—Mr. J. C. Rawl has been appointed Assistant Engineer in charge of the surveys from New Haven to New York, with office at Norwalk, Conn. He was recently with the New York and New England road.

Housatonic.—At the annual meeting in Bridgeport, Feb. 23, the following directors were chosen: Wm. H. Barnum, Lime Rock, Conn.; Wm. E. Downs, Derby, Conn.; A. B. Mygatt, New Milford, Conn.; Charles K. Averill, W. D. Bishop, Horace Nichols, Bridgeport, Conn.; David S. Draper, Edward Leavitt, John H. Peck, New York. The board re-elected Wm. H. Barnum President; David S. Draper, Vice-President; Charles K. Averill, Secretary and Treasurer.

Indianapolis & St. Louis.—At the annual meeting last week the following directors were chosen: John T. Dye, Indianapolis; James Barnett, Stevenson Burke, J. H. Devereux, George H. Russell, F. B. Thomas, Amos Townsend, Cleveland, O. The road is owned by the Cleveland, Columbus, Cincinnati & Indianapolis.

Jackson Cove.—Mr. James Westerman, of Sharon, Pa., is President of this new company.

Laurence.—At the annual meeting in Pittsburgh, Feb. 23, the following directors were chosen: R. W. Cunningham, New Castle, Pa.; John B. Jackson, J. N. McCullough, Pitts-

burgh; J. N. Hutchinson, Philadelphia; C. W. Cass, Charles Lanier, L. H. Meyer, New York. The road is leased to the Pennsylvania Company.

Lehigh Coal & Navigation Co..—At the annual meeting in Philadelphia, Feb. 27, the following managers were chosen: Joseph S. Harris, President; Francis C. Yarnall, Vice-President; T. Charlton, E. W. Clark, Francis R. Cope, Henry S. Dickson, Fisher Hazard, E. Lewis, John Leisenring, Charles Parrish, Charles Wheeler, George Whitney, James M. Wilcox.

Louisville, New Albany & Chicago.—Mr. D. F. Jennings has been appointed Acting General Freight Agent, with office in Chicago, in place of A. B. Southard, resigned. Mr. W. W. Bromley succeeds Mr. Jennings as Chief Clerk of the Freight Department.

Mr. J. E. Reeves having resigned the office of Superintendent of Transportation of this road, Mr. W. G. Sala has been appointed to succeed him, and assumed the duties of the position on Feb. 7.

Memphis & Little Rock.—The board has elected R. S. Hayes President; J. W. Goodwin, Secretary; A. H. Calef, Treasurer; D. S. H. Smith, Assistant Secretary and Treasurer.

Monson.—At the annual meeting in Bangor, Me., Feb. 26, the following directors were chosen: A. W. Chapin, Monson, Me.; George S. Cushing, Eli W. Hoyt, John F. Kimball, George A. Matthews, Lowell, Mass.

New Castle & Northern.—This new company has elected directors as follows: A. D. Wallace, Forbes Holton, Luther Wood, J. A. Hainer, George B. Berger, A. G. Negley, O. H. P. Green, New Castle, Pa.; George W. Ashton, Philadelphia; H. T. Hanna, Charles F. Calhoun, Frank Hummings, James S. Negley, Jr., George L. Reiber, James S. Negley, Pittsburgh. The board organized by electing the following: President, James S. Negley; Vice-President and Treasurer, D. H. Wallace; Secretary, James S. Negley, Jr.; Assistant Secretary, Forbes Holton; Chief Engineer, A. G. Negley.

New York, Chicago & St. Louis.—Mr. B. F. Horner has been appointed General Passenger Agent, in place of Henry Monett, resigned.

New York, West Shore & Buffalo.—Mr. Henry Monett is appointed General Passenger Agent. He was recently on the New York, Chicago & St. Louis, and formerly with the Pennsylvania Company.

Northern Central.—At the annual meeting in Baltimore, Feb. 23, the following directors were chosen: B. F. Newcomer, S. M. Shemekar, George Small, Harry Walters, Baltimore; Henry Gilbert, Harrisburg, Pa.; John P. Green, J. N. Hutchinson, Samuel C. Huey, Wistar Morris, Dell Noblit, George B. Roberts, Edmund Smith, Philadelphia. The board re-elected George B. Roberts President; Frank Thomson, Vice-President; Stephen W. White, Secretary; John S. Lieb, Treasurer.

Pennsylvania Railroad Leased Lines.—At meetings held in Philadelphia, Feb. 21, directors were chosen for the following companies, whose roads are leased to the Pennsylvania Railroad Co.: **Columbia & Port Deposit**.—President, Strickland Kneass; Directors, Alexander Biddle, J. N. DuBarry, J. P. Green, W. J. Haines, Wistar Morris, G. B. Roberts, Edmund Smith, N. P. Shortridge, H. M. Phillips, H. D. Welsh, J. P. Wetherill; Secretary and Treasurer, J. R. McClure. **Philadelphia & Trenton**.—President, Strickland Kneass; Directors, G. B. Roberts, Wistar Morris, Alexander Biddle, H. M. Phillips, N. P. Shortridge, J. N. DuBarry, J. P. Green, W. J. Haines, Wistar Morris, G. B. Roberts; Secretary, J. R. McClure; Treasurer, W. Taylor. **Western Pennsylvania**.—President, J. N. DuBarry; Directors, Strickland Kneass, Wistar Morris, George B. Roberts, Edmund Smith.

Pennsylvania, Virginia & Ohio.—Mr. Albert N. Sutton, of Pittsburgh, Pa., is President of this new company.

Philadelphia & Reading.—The following changes are made March 1, in consequence of the transfer of the property to the company by the Receivers: Mr. George De. B. Keim is relieved of the duties of General Solicitor and made Vice-President of both companies. George B. Karcher is made General Solicitor, with his office at the general office of the companies. The position of Chief Engineer of the Coal & Iron Co. is discontinued, and the Chief Engineer of the Railroad Co. is relieved of the charge of maintaining and repairing the railroads and property of the company. William H. Byes is appointed Assistant Chief Engineer of the Railroad Co., and Henry K. Nichols is appointed Chief Roadmaster. The locomotive and car shops, the foundry, forge and apprentice shop at Reading are transferred to the Philadelphia & Reading Coal & Iron Co., and all persons employed in those shops are transferred to the service of the latter company. The executive duties of the railroad are divided among the Vice-President, General Manager, and General Traffic Manager, subject to the orders and control of the President. The Vice-President will have charge of legal and financial questions of the anthracite coal trade, and of all others pertaining to the real estate of the company other than that occupied for railroad or canal purposes. The General Manager will have control of all questions involving the movement of traffic by the company as a transporter by rail or water and of maintaining and repairing the railroads, canals and property of the company. The General Traffic Manager will have charge of all freight and station agents, of making rates for tolls and transportation, and of all commercial questions pertaining to the interchange of traffic with other companies and transporters. S. B. Whiting is appointed General Manager of the Coal & Iron Co., and he will have general charge of all the business operations of the company.

Pittsburgh & Castle Shannon.—At the annual meeting in Pittsburgh, Pa., Feb. 22, the following directors were chosen: President, John H. Ortman; Directors, Walter Chess, E. Rohrkaste, S. Kaufman, P. F. Schuchman, Wm. Loeffler, C. Kohlmeyer, F. N. Stucky, S. Gallinger, M. D. Hayes, B. J. Stenger.

Rio Grande & Pecos Valley.—Mr. W. W. Hungerford has been appointed Manager and Auditor, with office at Laredo, Tex. He was recently on the Texas-Mexican road, and at one time was Superintendent of the Ogdensburg & Lake Champlain.

St. Joseph Valley.—At a recent meeting in Buchanan, Mich., the following officers were chosen: William Rough, President; J. H. Matthews, Vice-President and Superintendent; A. F. Rose, Treasurer and Auditor, and R. D. Dix, Secretary.

Scioto Valley.—The new board has elected the following officials: President, William Adams, New York; Vice-President, W. W. Franklin, Columbus, O.; Secretary, Isaac E. Gates, New York; Treasurer, James Robinson, Columbus, O. These are the former officers.

Susquehanna & Allegheny.—Mr. W. H. Brown, of Philadelphia, is President of this new company.

PERSONAL.

—Mr. A. B. Southard has resigned his position as General Freight Agent of the Louisville, New Albany & Chicago road.

—It is reported that the position of Secretary of the New York Railroad Commission has been offered to Mr. W. J. Mauriac, now Assistant Secretary of the Illinois Central.

—George J. Rice, late President of the Utica, Ithaca & Elmira Co., is this week on trial in New York on the charges of forgery and embezzlement brought against him by the agent of the English owners of the road. The principal charges against him are the issue of stock in excess of the authorized amount, which stock, it is alleged, he sold or hypothecated, appropriating the proceeds to his own use.

TRAFFIC AND EARNINGS.

Railroad Earnings.

Earnings for various periods are reported as follows:

Month of January:	1883.	1882.	Inc. or Dec.	P. c.
Norfolk & Western.....	\$31,487	\$163,572	I. \$31,915	18.9
Chesapeake & Potomac.....	77,634	65,402	I. 12,232	11.5
Northern Central.....	49,006	47,08	I. 91,884	22.6
Net earnings.....	158,219	92,069	I. 65,551	50.7
Pennsylvania.....	3,929,357	3,373,321	I. 556,036	16.7
Net earnings.....	1,17,058	1,04,266	I. 390,792	36.9
Utah Central.....	99,181	109,9-9	D. 10,800	9.8
Net earnings.....	48,627	59,151	D. 10,524	17.8

Third week in February:

Ch. & Eastern Illinois.....	\$28,226	Flour, bbls.....	\$9,151	Coal, &c.....	85,923	20.4
Ch. & Northwester.....	33,10	349,465	1,016,305	1,866,919	5.2	
Ch. & Northwester.....	32,65,00	327,740	1,671,283	3,114,860	7.4	
Denver & Rio Grande.....	111,100	95,300	1,683,992	4,270,408	18.0	
Louisville & Nashville.....	22,223	242,412	1,141,510	2,489,995	7.1	
Mississippi Pacific.....	589,123	448,324	1,433,421	3,197,435	20.7	
St. P. Minn. & Manitoba.....	87,648	67,200	1,20,448	2,906,730	30.5	
	97,000	85,030	I. 11,509	13.5		

Grain Movement.

For the week ending Feb. 17 receipts and shipments of grain of all kinds at the eight reporting Northwestern markets and receipts at the seven Atlantic ports have been, in bushels, for the past seven years:

Year.	Northwestern	Northwestern	Atlantic
1877.....	2,516,562	1,016,305	1,866,919
1878.....	2,379,274	1,671,283	3,114,860
1879.....	2,791,234	1,683,992	4,270,408
1880.....	3,356,490	1,141,510	2,489,995
1881.....	1,264,188	1,433,421	3,197,435
1882.....	3,205,050	2,355,015	1,970,732
1883.....	4,631,427	3,379,852	2,630,340

The receipts of the Northwestern markets for the week this year were thus larger than in the corresponding week of any previous year. They were also 1,128,000 bushels more than in the previous week of this year, when snow blockades prevented arrivals. The shipments were also much larger than in the corresponding week of any previous year, and larger than in any previous winter week—908,000 bushels more than the week before. These were also probably increased by the forwarding of grain that would have arrived from the West and been forwarded the week before but for the weather. Of the total shipments 92,124 bushels (2.7 per cent.) went down the Mississippi. The Atlantic receipts for the week, though 680,000 bushels more than in the corresponding week of last year, were much less than in 1881, 1879 and 1878. With one exception they are the smallest of this year, yet not much below the average.

Exports from Atlantic ports for the week ending Feb. 21 for three years have been:

Year.	Receipts.	Shipments.
1881.....	111,022	91,086
1882.....	1,758,010	1,533,131

For the week ending Feb. 24 receipts and shipments at Chicago and Milwaukee have been:

Year.	Receipts.	Shipments.
1883.....	168,802	143,666
1882.....	2,651,296	1,030,262

The receipts of grain this year were 157 per cent. more than last year; the shipments 20 per cent. more.

For the week ending Feb. 24 receipts at Eastern ports have been for:

Bushels: New York.....	Boston.....	Phil......	Baltimore.....</
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January shipments of 56,592 tons of coal and 10,595 tons of coke, 67,187 tons in all. Shipments of Cumberland coal for the week ending Feb. 24 were 37,845 tons. The total shipments this year up to Feb. 24 were 259,296 tons.

Petroleum.

Stowell's *Petroleum Reporter* gives the production of the Pennsylvania and New York oil wells for January as follows, in barrels of 42 gallons:

	1883	1882	Inc. or Dec.	P. c.
Production	1,948,319	2,353,551	D. 405,232	17.2
Shipments	1,37,815	1,657,067	D. 299,252	18.1
Stock, Jan. 31.	33,187,116	26,16,188	I. 8,470,928	31.4
Producing wells	17,600	18,400	D. 800	4.3

The production is the smallest of any month for two years, except for December, 1882. Of the total production 19.1 per cent. was from the Allegheny District in New York, 56.1 per cent. from the Bradford District, 12.3 per cent. from the Middle and 12.5 per cent. from the Southern districts.

The shipments were larger than in December, but smaller than those of any previous month since April, 1881.

The increase in stock during the month was 590,504 barrels. The stock reported is all in the pipe lines.

There were 125 new wells completed during the month and 12 dry holes developed, with 131 more wells in progress.

Shipments for the month were as follows:

	Per ct. of Barrels.	total.
New York	580,835	42.8
Philadelphia	77,734	5.7
Baltimore	14,926	1.1
Cleveland	332,199	24.4
Pittsburgh	23,096	1.7
Local points	179,954	13.3
Refined at Creek refineries	149,071	11.0

Total..... 1,357,815 100.0
Shipments of oil refined at Creek refineries (reduced to its equivalent in crude) were: New York, 55,392; Philadelphia, 920; Baltimore, 5,671; Boston, 23,000; local points, 64,088; total, 149,071 barrels.

Live Stock Rates to Albany.

A circular from Mr. Fink's office announces a change in the basis of live stock rates from the West to Albany. Hereafter they are to be for all live stock but hogs, from all Western points, less than the rate to Boston by one-fifth of the Chicago-Boston rate, whether gross or net. On hogs, the rate from Chicago to Albany shall be made by adding 5 cents to the Chicago-Boston rate, and taking 80 per cent. of it for the Albany rate, and from other Western points the difference between the rate to Albany and that to Boston shall be the same as the difference from Chicago, 4 cents less. But in another shape, the rate to Albany is to be less than the rate to Boston by an amount which shall be 4 cents less than one-fifth of the Chicago-Boston rate.

Passes for Men in Charge of Freight.

The following rules have been promulgated by Commissioner Midgley for the use of the Southwestern Railway Association, the Iowa Trunk Line Association and the Colorado Traffic Association:

"Until further notice the following rules will govern the passage of men in charge of live stock, locomotives, etc.:

"Live stock, west-bound—Pass one man in charge of one or two cars; two men in charge of three, four, or five cars; three men in charge of six cars or more; three men to be the maximum number to be passed in charge of any shipment; return pass to be granted if desired. For rules in regard to the passage of men in charge of live stock east bound, see east-bound tariffs."

"Locomotives, west-bound—Pass one man in charge of one or more locomotives; return pass to be granted if desired.

"Emigrant movables, east or west-bound—No pass to be given unless the car contains horses, mules, cattle, hogs, or sheep, in which event pass one man in charge of one or more cars. No return pass.

"Potatoes, apples, onions, etc., east or west-bound—Pass one man in charge of one or more cars of potatoes, apples, onions, and like freight, when necessary to have fire in the cars to protect contents from frost. No return pass."

Transportation of Corpses.

The New England General Ticket & Passenger Agents' Association held a largely attended meeting in Boston last week, and after a full discussion unanimously passed the following resolution, a copy of which will be sent to each railroad:

"Resolved, That corpses of persons who have died of smallpox, scarlet fever, typhoid fever, diphtheria or other contagious or infectious disease, are not to be received, unless in hermetically sealed cases. Corpses inclosed in other than hermetically sealed cases are to be received for transportation only when accompanied by a certificate signed by the town or city clerk or registrar, or by a well-known and respectable medical officer, stating that the death did not result from a contagious or infectious disease. This certificate must also distinctly state the name of the disease, or nature of the casualty, that occasioned death, and should be securely fastened to the top of the case. Corpses are to be taken only when in the care of an accompanying adult person, and must be prepaid by a first-class unlimited ticket."

The Iowa Railroad Commission on Rebates to Local Elevator Owners.

Feb. 23 last the Iowa Railroad Commissioners gave their decision in a case involving the question of discrimination and rebates. The Trustees of Red oak township complained that the combination of grain-buyers exists in Montgomery County at different railroad stations with the Chicago, Burlington & Quincy Railroad; that the grain buyers are bound together by promises, pledges and penalties to ship all grain over the Chicago, Burlington & Quincy road, and the railroad company bind themselves to give the members of the association better facilities and commissions and rebates than are given to persons outside of the association. The Board notified the railroad company of the complaint, and have secured all the facts in the case on both sides. The Board say the question comes under Sec. 11 of the acts of the Seventeenth General Assembly creating the Board of Railroad Commissioners, and which provides that railroad companies shall demand and receive for the transportation of persons or property the same rate per ton per mile upon like conditions and under similar circumstances. Thomas J. Potter, General Manager of the Chicago, Burlington & Quincy road, says the charge that a rate is given the association which would be denied under similar circumstances is not correct. The Board say that this case raises a fair construction of the statute. A technical construction would render it useless as far as preventing discriminations is concerned, because circumstances are never quite the same with regard to shipments. An association may be able to offer more than an individual of a given product of a special industry, and no good reason exists for getting a lower rate than should be given to the individuals who can offer the carrier less goods of the same product in the same line of business. The association may own elevators that have cost considerable capital to build, and rail-

roads require elevators; but that is not a good reason why an individual who does not own an elevator should pay more for transportation, if he loads without delay. The theory of the law is that it should cost about the same for like distances, giving to parallel roads about what produce grows or is prepared for market on its tributary territory. The capacity of all roads to move freight is equal to the requirement for it. From the standpoint of the carriers' interest it is needless to make a rate less than what is fair and reasonable. From the shipper's standpoint, the rate should not be more than fair and reasonable. When such arrangements exist for moving the crops to market to give rebates to an individual gives him an advantage over other shippers that he has no right to. When rebates are given to an association of shippers that are denied to an individual it puts him at a disadvantage in purchasing, and tends to the encouragement of monopolies, resulting in neighborhood dissatisfaction. Like conditions and circumstances seem to be applicable to all shipments made in the usual course of business arising as above described, where a shipper loading from an elevator or side-track should expect the same rate. There is no good reason why a farmer or merchant should not get the same rate as an elevator-man gets, provided he loads substantially in the same time. Grain is nearly all sent to market through elevators, and the investment in elevators has sufficient advantages over side-track loaders without rebates. They do not believe that the law requiring like rates under like conditions and circumstances justifies discriminations between owners of elevators and other shippers. In this case they recommend that like charges be made where not less than full car-load lots are offered at the same station, and if any concessions or drawbacks be given they should be open to all shippers offering freight of the same class in the same line of business.

OLD AND NEW ROADS.

Albany & Susquehanna.—An attempt was made last week to pass 10 forged \$1,000 bonds of this road on Townsend, Wheeler & Co., of Philadelphia. Some suspicion was aroused, and further inquiry proved that the bonds were counterfeit. One George C. Barber was arrested, and it is said that other arrests will be made. It is not known whether any other forged bonds have been set afloat, but none have so far been discovered.

Baltimore & Ohio.—Mr. J. B. Washington, President of the company which is to build the new line from Baltimore to Philadelphia, speaks as follows to a correspondent of the New York *Times*: "When the Pennsylvania Railroad Co., a year or more ago, purchased the Philadelphia, Wilmington & Baltimore Railroad, it secured the only direct line between Philadelphia and Baltimore, and in a measure had the Baltimore & Ohio by the throat. Then the project of constructing another direct line between the two cities to run parallel with that gobbled by the Pennsylvania Railroad was suggested and considered feasible. A charter for the Philadelphia & Baltimore Railway Co. was secured in Pennsylvania, and a line located from Philadelphia to the southern state line. After this was done, negotiations were commenced for the purchase of the Delaware Western Railroad, which has been constructed for a number of years, and whose tracks extend from Wilmington, Del., to Landenburg. These negotiations ended in the consolidation of the two companies last week. The Baltimore & Ohio, under the rights granted by the state of Maryland, will run branch north from Baltimore to the Delaware line, branches of the Delaware Western will be constructed north and south, connecting with the Baltimore and Ohio's extension on the south and the line originally located in Pennsylvania on the north. This will give the Baltimore & Ohio a direct route to Philadelphia, and from that city it will be easy to obtain advantageous traffic arrangements by which New York can be reached. The Baltimore & Ohio will also get into Wilmington, Del., without any trouble, afeat that could not have been accomplished without trouble if the line of the Delaware Western had not been purchased. The value of this entrance will be better understood when I state that if we operate a very small portion of the old Delaware Western tracks we will be paid for our outlay. Our line will be about 97 miles long and as direct in every respect as the Philadelphia, Wilmington & Baltimore line; in fact, the two roads will be in sight of each other the greater part of the way. Work will be commenced on the new line at once. I have already signed some of the papers necessary to secure the right of way. Numerous bridges will have to be built and other difficult engineering work done; therefore, I would not like to fix a date for the completion of the enterprise. Neither can I say whether we will commence business with a single or double track. The work of construction has been placed in the hands of Mr. Samuel Spencer, Second Vice-President of the Baltimore & Ohio. Mr. Spencer will also act as General Manager."

Camden & Atlantic.—At the annual meeting last week this company passed definitely under Pennsylvania Railroad control, a board of directors being chosen a majority of whose members are connected with the Pennsylvania. Mr. Elkins, who voted the Pennsylvania stock, had 13,307 shares out of the total of 25,161, and 4,030 shares were voted for his ticket by other stockholders. It is understood that the separate organization and management of the company will be maintained, but that it will be worked in harmony with the West Jersey road.

Central Iowa.—The Boston *Advertiser* of Feb. 26 says: "A circular has been issued claiming that the management of the Central Iowa is acting unjustly in applying the earnings of the road to the payment of interest on the first-mortgage bonds of extensions of the road, such money being first applicable rather, as is claimed, to dividends on the first and second-preferred stock, under the decree of the court establishing the reorganization of the road. It is claimed that the road is earning the full dividend of 8 per cent. on the first-preferred stock, and it was in anticipation of such earnings that the first-preferred sold at one time as high as 85, and the second-preferred at 70. The Iowa Railroad Commissioners have decided that the Central Iowa Co. must build into the town of Norwood, because the town voted the company's predecessor a subsidy."

Chicago, Burlington & Quincy.—The general offices of this company have been moved into its new building on the corner of Franklin and Adams streets in Chicago. The building is large and the offices have all been arranged with a view of affording the utmost comfort and convenience. They are arranged around a large court with an enormous sky-light, and are entered from galleries running around the court. On the first floor are the offices of the General Manager, General Superintendent, General Freight Department and General Passenger Department. On the second floor are the offices of the President, Treasurer, Financial Department, General Solicitor and Secretary. On the third floor are the offices of the General Auditor and assistants, Ticket Auditor, Claim Department and Auditor of Expenses. On the fourth floor are the offices of the Freight Auditors, occupying all the rooms on the floor. On the fifth floor are the Purchasing Agent and Engineer's Department. On the sixth floor is a suite of rooms for the janitor and his family, dining-halls, kitchen and gymnasium. The basement is oc-

cupied by the stationery and supply departments. Some of the vaults in the building are the size of a large room. Besides three elevators there are two flights of wide stairs by which to reach the offices on the various floors. The building is considered to be one of the finest in Chicago.

Cincinnati & Baltimore.—At the annual meeting last week it was decided to call a special meeting, to be held March 26, to take final action on the sale of the road to the Cincinnati, Washington & Baltimore (late Marietta & Cincinnati) Co., as provided for in the reorganization of that company.

Cincinnati, Van Wert & Michigan.—This company has bought the Paulding & Cecil, a short road running from Paulding, O., about six miles to Cecil. This will be used as part of the Van Wert road's extension northward.

Clearfield & Jefferson.—This company has been organized to build a railroad from a point on the Bell's Gap road in Clearfield County, Pa., northwest to Punxsutawney in Jefferson County, the terminus of the Rochester & Pittsburgh road. The distance is about 32 miles.

Cleveland, Indiana & St. Louis.—A meeting was held in Lebanon, Ind., last week, at which a board of directors was chosen for this company, formerly the Anderson, Lebanon & St. Louis. The directors previously in office claim that the persons who were present at this meeting were not stockholders and that their action is wholly illegal, and they have begun suit to enjoin them from interfering in the affairs of the company.

College Hill.—Suit has been brought in the Court of Common Pleas in Cincinnati for the foreclosure of the first mortgage of \$60,000, which is a short narrow-gauge suburban line running out of Cincinnati. The appointment of a receiver is asked for.

Denver & New Orleans.—A dispatch from Denver, Col., Feb. 23, says: "In the United States Court to-day Judge Hall delivered an opinion in the case of the Denver & New Orleans Railroad against the Atchison, Topeka & Santa Fe Railroad, on a question of interchange of business at Pueblo. The Court decrees in favor of the complainant under certain restrictions, and not to the full extent of the bill asked by the complainant. Judge Thatcher, counsel for the Santa Fe Co., gave notice of appeal, and stated that he would, under the equity rules, apply for suspension of the injunction during the appeal."

Des Moines & Fort Dodge.—Mr. George W. Ogilvie, general ticket agent of the Des Moines and Fort Dodge road, has issued the following circular:

"An arrangement for the operation of through passenger trains between Des Moines and Minneapolis, via Angus, having been entered into by the Des Moines & Fort Dodge Railroad Company and the Minneapolis & St. Louis Railway Company, to continue for a period of twenty years, I would request that a full line of tickets be placed on sale to points on the line of the Minneapolis & St. Louis Railway, and to points north and northwest of Minneapolis, via this line. Coupons should read Des Moines & Fort Dodge Railroad, Des Moines to Angus, and Minneapolis & St. Louis Railway, Angus to points on Minneapolis & St. Louis Railway, or to Minneapolis, if for north or west of that point. The earnings accruing to the above line should be reported, 20 per cent. to the Des Moines & Fort Dodge Railroad, and 80 per cent. to the Minneapolis & St. Louis Railway, except that for tickets to Fort Dodge, via this line, the earnings should be reported 60 per cent. to the Des Moines & Fort Dodge and 40 per cent. to the Minneapolis & St. Louis."

Erie & Wyoming Valley.—Contracts will soon be let for the grading of this road, which is to run from Hawley to Pittston, Pa., 46 miles. It is to be a branch of the New York, Lake Erie & Western, giving that road a better line for anthracite coal traffic than it has ever had before. There is some heavy work on the road, and it will probably take about a year to complete it.

Fairplay, Mt. Sheridan & Leadville.—This company is making preparations to begin work on its road as soon as spring opens. The line proposed is from Garo, Col., on the Denver & South Park line of the Union Pacific, to Leadville, with an extension beyond Leadville into the mining regions. The line includes a tunnel about 5,000 ft. long through Mt. Sheridan, and it will complete a line from Denver to Leadville nearly 75 miles shorter than either of those now in use.

Fort Worth & Denver City.—This company has closed a large contract for transporting cattle to Wichita Falls, Texas, the northern terminus of the road. From that point the cattle will be driven across the Indian Territory to Kansas.

Hartford & Harlem.—A dispatch from Hartford, Conn., Feb. 22, says: "The Legislature of this state is likely to be as actively engaged in the discussion of railroad matters as was that of last year. The situation is curious. The New York, New Haven & Hartford, as is generally known, has the monopoly of the travel between New York, Springfield and Boston. It is surveying to increase its tracks from two to four, and naturally wants no competition. Last year the company succeeded in convincing the Legislature that a competing line was not needed, and that body defeated a parallel road project. This year two parallel road enterprises are in the field. The strongest is the Hartford & Harlem, proposing to build from the Harlem River to a connection with the New York & New England road tracks a few miles from this city. The second enterprise is the so-called Olmstead parallel, which, like the Hartford & Harlem, has, from New York to New Haven, projected a route running parallel and close to the New York, New Haven & Hartford tracks. The three companies are now in a triangular fight, and just how the matter stands is difficult to determine. The Hartford & Harlem wants permission from the Legislature to consolidate and make joint stock with roads within or outside the state, whether existing or only chartered. One object of seeking such permission is to consolidate with New York roads, from the Connecticut line to Harlem river, whose charters the Hartford & Harlem controls. In the hearing of Wednesday the Olmstead party based their objections on their belief that the Hartford & Harlem contemplated a consolidation and joint-stock arrangement with the New York & New England road. This, they claimed, should not be permitted. Mr. Lewis M. Brown, of New York, Vice-President of the Hartford & Harlem, came before the committee as a witness, and said that there had been no proposition for any such consolidation, nor was he aware that any such thing was in contemplation. This would seem to be an explicit denial; but the Olmstead parallel people, after the hearing, were industrious in circulating the story that such consolidation would be made. They claimed that there was warrant for their belief in the fact that Lee, Higginson & Co., the Boston parties interested in the Hartford & Harlem road, are very large holders of New York & New England stock and bonds, and would favor any consolidation which would send those securities up to a better figure in the market. The suddenly

developed opposition of the Olmstead parallel project to the bill asked for by the Hartford & Harlem, and which can do them no harm, is regarded with suspicion. And it is openly intimated that since the first hearing on the bill the Olmstead party may have come to an understanding with the New York, New Haven & Hartford road to join in with them against the Hartford & Harlem, which appears in the light of a formidable project likely to be pushed through. In fact, it was suggested at the opening of the legislative session, when the Olmstead party's project first exhibited signs of renewed life, after lying quiet for a year or two, that the New York, New Haven & Hartford road was merely using it as a checkmate to the progress of the Hartford & Harlem scheme."

Jackson Cove.—This company has been organized to build a railroad from Lake, Pa., south to a point in Pine township in Mercer County, a distance of 10 miles. It is a coal road.

Kentucky Central.—Notice is given that Covington & Lexington mortgage bonds maturing March 1, 1883, will be paid on and after that date, on presentation at the office of Morton, Bliss & Co. in New York. The amount of this issue outstanding was \$792,000 by the last report.

It is announced that the company has placed the remainder of the consolidated mortgage bonds, about \$1,800,000. The money received for these will pay off the bonds now maturing, and will pay for the completion of the extension to the Tennessee line.

Long Island.—This company will soon begin work on a spur 1½ miles long, from Fresh Pond to a connection with the Manhattan Beach road. This will be completed in time for the summer travel, and the through trains to Manhattan Beach will then start from the Long Island station at Hunter's Point, although local trains will run still to the old terminus at Greenpoint. The Manhattan Beach road will be changed from 3 ft. to standard gauge. The company has recently contracted for 20 locomotives, 25 standard passenger cars and 50 light cars for summer travel.

Work has been begun on the extension of the Sag Harbor Branch from Bridgehampton, N. Y., along the southern side of Long Island to Fort Pond Bay and Montauk Point. The line runs along a sandy tract of country, where the chief difficulty will probably be to keep the road-bed from blowing away.

Louisville & Nashville.—It is reported that this company will begin soon the construction of a road from Montgomery, Ala., to Chattahoochie, which will shorten considerably the distance from the northwest to Florida. It seems hardly likely, however, that the company would build such a line, as it would have but little local traffic, while the through traffic certainly would not warrant the outlay, and its construction would injure very much the line from Pensacola to Chattahoochie which it has just completed.

Manhattan.—Still another plan of settlement with the Metropolitan stockholders was brought forward last week, and its adoption was confidently predicted. It failed, however, like all its predecessors, the representatives of the two companies not being able to agree.

Mexican Central.—A dispatch from Boston, Feb. 28, says: "In order to close up the subscriptions to circular No. 4, President Nickerson, of the Mexican Central Railroad, today issued another circular, which offers to March 2 the privilege of subscription to the amount of blocks equal to that already taken, and on the same terms as those allowed the syndicate. It is understood, as an extra inducement, that a \$500 bond will be given with each block."

Milwaukee, Lake Shore & Western.—Work is soon to be begun on a branch line from Medina, Wis., on the Oshkosh Branch, eastward to Menasha and Neenah. The distance is about 9 miles and the branch will be parallel to the Wisconsin Central track.

Missouri Pacific.—The following statement for the year 1882, said to be from official sources, has been published:

Net earnings, Missouri Pacific	\$3,698,783
" St. Louis, Iron Mountain & Southern	3,732,150
Total	\$7,430,933
Fixed charges, Missouri Pacific	\$1,500,000
" Iron Mountain	2,135,000
Total surplus	3,635,000

This surplus is equal to about 12 per cent. on the stock. The mileage included in the Missouri Pacific is 979 miles; in the Iron Mountain 816 miles, a total of 1,795 miles of road.

Morgan's Louisiana & Texas.—The sale of the stock in this company to Mr. C. P. Huntington appears to be confirmed, although no public announcement has been made. The Morgan property is a very valuable one, consisting of the railroad from New Orleans to Vermillionville and its branches, the Gulf, Western Texas & Pacific road, the seven miles of railroad from Houston to deep water, a large fleet of steamers and about two-thirds of the stock of the Houston & Texas Central Co., carrying with it the control of about 700 miles of road. There are \$5,000,000 bonds, which are held by the Morgan estate. The price paid for the stock of the company is said to have been \$7,500,000. It is also said that Mr. Gould was invited to join in the purchase, but did not accept.

New Orleans and Northeastern.—Track on this road has been laid to Arata, Miss., 16 miles beyond the late terminus and 43 miles southward from the starting point at Meridian. On the southern end track has been laid for 8 miles northward from Lake Pontchartrain in Louisiana, but work cannot progress very fast, on account of the numerous bridges to be built. About 11 miles of the trestle-work at and about Lake Pontchartrain have been completed.

New York, Lake Erie & Western.—Surveys have been made from time to time for several years past with a view of improving the line of the Buffalo & Western divisions and avoiding some of the heavier grades. Improvements of this kind have already been made at several points and it is said that more will be done this year, in accordance with the general policy of improving the road and securing economy in working.

New York & New England.—The second-mortgage bonds recently offered have been taken by a syndicate, at a price not stated. The money is to be used to complete the second track to Hartford and to make other improvements.

New York, New Haven & Hartford.—It is said that this company is considering the question of extending its Air Line Division from Willimantic to Providence, thereby completing, with the Boston & Providence, a new through line between New York and Boston, which will be shorter than either of those at present in use.

The officers of the company are about to take measures to stop the operations of the gamblers and card sharps who are now constant travelers on the through trains, and who have made themselves very obnoxious to the public.

New York, Pennsylvania & Ohio.—Mr. Charles E. Lewis, one of the voting trustees of this road, has been for some days in New York, in conference with President Jewett, of the New York, Lake Erie & Western. It is understood that negotiations are in progress for an agreement between the two companies, but information as to its nature is withheld until the terms are settled.

Northern Central.—This company's statement for January, the first month of the fiscal year, is as follows:

Earnings	\$499,253
Operating expenses	282,925
Extraordinary expenses	58,108
Total expenses	\$341,033
Net earnings	\$158,220

As compared with January, 1882, there was an increase of \$91,855, or 22.6 per cent., in earnings; an increase of \$26,334, or 8.4 per cent., in total expenses, and an increase of \$65,551, or 70.7 per cent., in net earnings.

Northern Pacific.—On the western end track is now re-pored laid to a point 860 miles eastward from Wallula Junction. Work is progressing actively on the bridge at the third crossing of Clark's Fork of the Columbia.

Regular trains run to the second crossing of Clark's Fork, 313 miles from Wallula Junction.

Ogdensburg & Lake Champlain.—The unappropriated balance of the \$3,500,000 consolidated 6 per cent. bonds authorized in 1880, is to be offered for sale. The proceeds will be used to build the connecting link from Rouse's Point, N. Y., to Swanton, Vt., the terminus of the St. Johnsbury & Lake Champlain road, and to provide additional equipment for the road.

Ohio River.—Proposals will be received at the office of Wallace McGrath, Engineer of the Ohio Valley Construction Co., in Parkersburg, W. Va., until noon on March 8, for the grading, masonry, iron bridging, trestle and pile bridges, cross-ties, tracklaying and ballasting for the Ohio River Railroad, between Benwood and Parkersburg, W. Va., being about 90 miles in the valley of the Ohio River. Bids will be received for the whole or any part of the work. Plans, profiles and specifications can be seen at the office of the Chief Engineer.

Old Colony.—The stockholders of this company meet next week to consider the question of consolidation with the Boston, Clinton, Fitchburg & New Bedford Co., whose road is now leased. By the terms of the agreement holders of preferred stock in the leased road will receive Old Colony stock to an equal amount, and holders of common stock will receive one share of Old Colony stock for 2½ shares of their present stock. If the agreement is concluded, it will call for the issue of about \$2,300,000 Old Colony stock to take up the Boston, Clinton, Fitchburg & New Bedford stock.

Pennsylvania.—This company's statement shows for January, as compared with the same month in 1882, on all lines east of Pittsburgh and Erie:

An increase in gross earnings of	\$556,036
An increase in expenses of	159,244
Net increase	\$396,792

All lines west of Pittsburgh for the month show a surplus over all liabilities of \$174,981, being a gain of \$132,233 as compared with the same month last year.

It is reported that the company has been making large purchases of coal and coke lands in the Connellsburg region. These purchases are made, it is said, with a view to controlling the coke production and keeping out rival lines.

Pennsylvania, Virginia & Ohio.—This company has been incorporated to build a railroad from Miller's Run in Fayette County, Pa., westward through Washington County to the West Virginia line, a distance of about 45 miles.

Philadelphia & Reading.—On Feb. 26 the Union Trust Co. paid off about \$750,000 of the receivers' certificates, that being the first day of payment. Subscriptions have been received more than sufficient to cover the entire issue of \$2,000,000 car-trust bonds.

The Receivers have actively pushed forward their preparation for retiring from their positions and transferring the road to the company on March 1. It was expected that the transfer could be made, the company giving satisfactory security for the Receivers' liabilities.

The Receivers' statement for January and the two months of the fiscal year from Nov. 1 to Jan. 31 is as follows:

	January.	Two months.
Gross	Net	Net
Railroad traffic	\$1,560,741	\$677,984
Canal traffic	*780	*30,886
Steam colliers	44,824	19,120
Richmond barges	3,900	*876
Total R. R. Co.	\$1,605,775	\$675,342
Coal & Iron Co.	951,219	*10,465
Total	\$2,559,994	\$664,877
For 1881-82:		\$1,508,661
Railroad Co.		\$1,454,014
Coal & Iron Co.		129,842
Total		\$1,584,456

* Loss.

The earnings of the Railroad Co. thus show a fair increase, but the Coal & Iron Co. shows a loss thus far for the current year.

The statement of traffic is as follows:

	1883.	1882.	1883.	1882.
Passengers	948,282	808,600	1,906,985	1,250,208
Tons merchandise	526,833	593,091	1,054,332	1,180,013
Tons coal	576,211	508,147	1,281,776	1,268,492
Tons coal on collieries	36,745	48,285	81,906	95,320
Tons coal mined:				
Coal & Iron Co.	257,934	240,432	599,902	624,372
Tenants	107,761	89,706	228,177	219,209
Total	365,695	330,138	828,177	843,581

The month showed a considerable increase in coal business, but a falling off in general freights.

A dispatch from Philadelphia, Feb. 28, says: "The Philadelphia & Reading Railroad and Coal & Iron companies today passed out of the hands of the Receivers and were restored to the managers representing the stockholders of those corporations. The order for the transfer was made in the Circuit Court of the United States on Feb. 14. Meanwhile the preliminaries were perfected, and at noon to-day the Receivers met with President Franklin B. Gowen and Secretary Albert Foster, of the companies. The session was protracted until nearly 2 o'clock, and immediately upon its adjournment a meeting of the board of managers, in which the Receivers' party participated, was held in the President's room. This session lasted for nearly two hours, and at its close the two companies had emerged from the hands of the Receivers. The formal transfer was made by a document addressed to the President and managers, and signed by the three Receivers. Circulars announcing the termination of the receivership were mailed to the stockholders of the companies to-night. All officers, agents and

employés of the Receivers of the Railroad Co. and of the Coal & Iron Co. will be retained in the service."

Pittsburgh & Castle Shannon.—At the annual meeting last week it was stated that the company in 1882 mined and sold 3,509,503 bushels of coal for \$219,400. The total receipts from coal and railroad were \$237,352; expenses, \$194,294; net earnings, \$43,058. The bonded debt now amounts to \$61,100. Improvements have been made in the facilities for coal mining. An effort was made to increase surburban traffic on the road by the sale of building lots at Castle Shannon, with partial success.

Rochester & Pittsburgh.—Track on this road is now laid to Dubois, Pa., on the Low Grade Division of the Allegheny Valley road, which is 28 miles beyond the Philadelphia & Erie crossing at Johnsonburg, 88 miles from Salamanca, and 196 miles from Rochester. Trains will be running through to Dubois in a few days. In this neighborhood the company reaches the coal mines under its control.

On the further extension from Dubois to Punxsutawney, 25 miles, the grading is all done, and tracklaying will soon be begun.

St. Louis, Alton & Terre Haute.—It is stated that the new lease of the main line and Alton Branch has been completed and executed. The new lease was made necessary by the sale of the property of the Indianapolis & St. Louis Co., the former lessee, under foreclosure. It is in effect simply a transfer of the lease to the Cleveland, Columbus, Cincinnati & Indianapolis Co., which now owns the Indianapolis and St. Louis road.

Saugatuck Valley.—It is understood that the New York, New Haven & Hartford Co. is now willing to assist in building this projected road, which is to run from the New Haven road near Westport up the Saugatuck Valley about 10 miles to Redding. It will be about half way between the Danbury & Norwalk and the Housatonic roads.

Savannah, Florida & Western.—This company has established a line of steamboats on the Suwanee River, running between Branford, Fla., the present terminus of the Florida Division, and Cedar Key.

Securities on the New York Stock Exchange.—The following stocks and bonds were listed Feb. 28 by the Governing Committee of the New York Stock Exchange:

New York, Lackawanna & Western (leased under guarantee by the Delaware, Lackawanna & Western), \$10,000,000 of stock, dividends at 5 per cent., and \$12,000,000 of first mortgage bonds, 6 per cent. The entire issue of both.

Peoria & Pekin Union, \$1,500,000 first-mortgage bonds, 6 per cent., and \$1,500,000 income bonds, 6 per cent., non-cumulative. The entire issue of both.

Atchison, Topeka & Santa Fe, \$1,500,000 second issue first series (indicating the portion already authorized to be issued) 6 per cent. sinking fund bonds. Nos. 5,001 to 6,500, inclusive.

Albany & Susquehanna, \$3,000,000 of first consolidated mortgage bonds, Nos. 3,001 to 6,000, inclusive, 6 per cent. interest, second issue authorized to secure bonds to amount of \$10,000,000. The first issue was at 7 per cent.

Buffalo, New York & Philadelphia, \$11,000,000 of consolidated first-mortgage bonds, whole issue, 6 per cent.; \$4,000,000 retained by the company to retire outstanding divisional bonds.

Oregon Improvement Co., \$5,000,000 of stock out of a total issue of \$7,000,000, for which certificates are outstanding, and \$5,000,000 bonds, \$1,000 each, Nos. 1 to 5,000, inclusive, 6 per cent.

Shenandoah Valley.—A mortgage has been executed and recorded to secure proposed issue of \$2,500,000 income bonds, to bear 6 per cent. interest, if earned. This mortgage is a third lien on the road. The proceeds of the bonds are to be used to provide additional equipment and make some improvements on the road.

Silver City, Deming & Pacific.—A large part of the grading of this road is completed, and work is in progress on the bridge over the Mimbres River. Tracklaying was begun at Deming, N. M., last week.

Susquehanna & Allegheny.—This company has been organized to build a railroad from Punxsutawney, Pa., eastward through Indiana, Clearfield, Clinton, Lycoming and Union counties to Sunbury or Milton. The distance is about 150 miles, passing through the Snow Shoe and Clearfield coal districts.

Terre Haute & Southeastern.—A dispatch from Indianapolis says that this company has concluded a lease of its road to the Cleveland, Columbus, Cincinnati & Indianapolis Co. The lease also includes some coal lands on the line. The road is owned chiefly in Terre Haute, and the rental agreed on is said to be \$48,000 a year. The road is in operation from Terre Haute, Ind., to Northington, 40 miles.

Toledo, Cincinnati & St. Louis.—The Illinois Circuit Court has granted an injunction restraining this company from laying its track on certain streets in East St. Louis, Ill., without first obtaining proper permission from the city authorities.

Wabash, St. Louis & Pacific.—The Pullman sleeping cars on this road east of St. Louis were to be replaced by Wagner cars on March 1. The latest advices, however, are that the arrangements were not quite completed, the Wagner cars for this service not being all in readiness. The company has been negotiating for the purchase of the Pullman cars now in use on the road, but the matter has not yet been closed.

The United States Circuit Court in Indianapolis has ordered a further decree in favor of the equipment bondholders for accrued interest amounting to about \$418,000.

Waynesburg & Washington.—The total receipts of this short Pennsylvania road last year were \$42,528, and the expenses \$30,369, leaving \$12,159 net earnings. There is a floating debt of about \$8,000, which is being gradually reduced by payments from earnings.

Western North Carolina.—The bill which has passed the lower house of the North Carolina Legislature provides that this company shall purchase the \$520,000 bonds held by the state for \$300,000, and shall then have full authority to mortgage its road, to lease or consolidate with other roads, subject only to the lien of the \$350,000 bonds which are endorsed by the state. The company is required to complete the Ducktown Branch to the Tennessee River at the mouth of Nantahala by Sept. 1, 1884, and thereafter to keep at least 100 men continuously at work on the extension to Murphy. The company is authorized to build branches up the Nantahala River toward Maryville, Tenn., and along the Tennessee toward Clayton, Ga., to the state line.

Western Union Telegraph.—A hearing was had last week in the Reiff suit to enjoin the execution of the lease of the Mutual Union lines.

The Supreme Court has granted leave to the Attorney-General of New York to bring suit to dissolve the Mutual Union Co. on the ground of alleged irregularities.